MOTOR'S HANDBOOK

Specifications
Interchangeable Parts
Service Instructions

12TH EDITION

VALVE TIMING . . .

WHEN checking valve timing against flywheel marks, or vibration dampener marks or piston position, first adjust the valve to correct "Valve Timing Clearance" as given in the tables on pages 56 and 57.

When a gauge that rests on the top of the piston is used, care must be taken to make certain that the gauge rests on the piston and not on a carbon deposit, to assure an accurate reading.

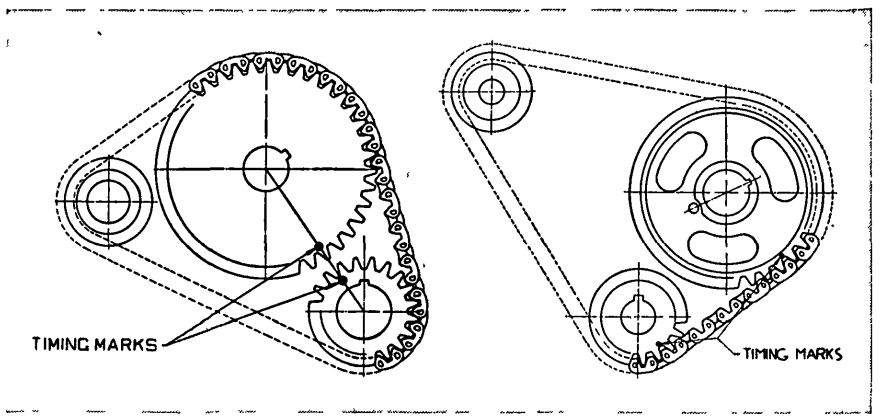
Many cars use a short chain driving only the camshaft. This type is not adjustable and should be replaced when it wears so that the chain rides high on the sprockets and is liable to jump a tooth. To fit on the sprockets with the correct initial tension, the replacement chain for this type of drive must be of exactly the right length.

Some chains have arrows stamped on them. When this type is replaced the chain must rotate in the direction of the arrows. If there are no arrows the chain can be installed either way.

When the chain can be adjusted it usually drives the generator in addition to the camshaft. The popular way to adjust this type is to loosen the generator screws and pivot the generator on the bottom screw. The two top holes in the generator are slotted. Special methods of adjustment used on certain cars are described under the car name.

Timing gears have a mark on a tooth of one of the gears and on the gear rim or two teeth of the other. For proper valve timing, the marked teeth must mesh. Timing sprockets are marked in the same manner but instead of meshing, the marks should line up with the centers of the camshaft and crankshaft or else a set number of links must lie between the marks on the sprockets when No. 1 piston is at TDC. A straight-edge between the centers is the best way to check the former setting as a variation of one tooth will throw the valves out of time.

Before replacing a gear cover plate it is advisable to make sure that the supply of oil to the drive has not been interfered with in any way. Cross drilled hollow studs or copper tubing must be free and open and not pinched or bent out of place.



AUBURN

6-85 . . . 1930—Intake valves open 1½ flywheel teeth after top dead center. The camshaft is properly timed when there are twelve links on the lower side of the chain between the sprocket punch marks.

8-95 . . . 1930—Intake valve opens on top dead center. The camshaft is properly timed when there are twelve links on the lower side of the chain between the sprocket punch marks.

125 . . . 1930—Intake opens on top center. Punch marks on crankshaft and camshaft gear should line up.

8-98 . . . 1931—Intake opens 1¼ flywheel teeth before top dead center.

8-100 . . . 1932—Intake opens 1¼ teeth before top dead center. Punch marks on camshaft and crankshaft should line up.

12-160 . . . 1932—Intake opens on top center. There should be 21 links between punch marks.

8-101, 105 . . . 1933—Intake opens 1½ teeth before top dead center. There should be 12 links on lower side, between punch marks.

12-161, 12-165 . . . 1933—Intake opens at top center. There should be 21 links between punch marks.

Standard 6-52X, Custom 6-52Y . . . 1934—With No. 1 intake valve set at .012" clearance, crank the engine until No. 1 piston is coming up on its exhaust stroke and the TDC 1&6 mark on the flywheel is 1½ teeth ahead of the pointer at the peep hole. Number 1 intake valve tappet should now be tight with the valve about to open. When the TDC 1&6 mark on the flywheel registers with the pointer at the peep hole there should be 12 links between the punch marks on the camshaft and crankshaft sprockets, measured on the lower side of the chain.

Standard 8-50X, Custom 8-50Y . . . 1934—The procedure is the same as described for Auburn 6-52X except that the flywheel is marked TDC 1&8.

BUICK

1930, 1931, 1932—The peep hole is on the left side of the flywheel housing. Crank the engine until No. 6 piston is coming up on the compression stroke and continue until the index line on the peep hole is in line with the line IN on the flywheel, past the UDC 1&6 mark. At this point No. 1 intake valve tappet should be tight and the valve about to open.

To inspect the timing gears, remove the gear cover plate. The camshaft and crankshaft gears have punch marks which must mesh.

1933—Crank the engine until No. 1 piston is coming up on its exhaust stroke and the IO mark on the flywheel registers with the pointer at the peep hole. In this position No. 1 intake valve tappet should be tight and the valve about to open. The camshaft and crankshaft gears have punch marks which must mesh.

1934—Place an indicator on the exhaust valve spring cap for either No. 2 or No. 7 cylinder so that it will accurately measure the valve opening. The valve being checked should have a clearance of .008" when cold. Set the indicator so that it will register 0 with the valve closed. Crank the engine until the valve opens .180". With the engine in this position the No. 1&8 TDC mark on the flywheel should be visable in the peep hole. The marks on the camshaft and crankshaft gears should mesh. This method can also be used on all 1931, 1932 and 1933 Buick cars.

CADILLAC

V8, La Salle V8 . . . 1930, 1931, 1932—The peep hole is on the right front side of the flywheel housing. Crank the engine until No. 1 piston is at the top of its exhaust stroke. At this point No. 1 exhaust valve tappet should still be tight, but the valve closed, and the C 1-5 mark on the flywheel in line with the pointer on the peep hole.

To set the sprockets, remove the chain case cover. The sprockets have punch marks which should line up with the centers of the camshaft and crankshaft. There is no chain adjustment.

V8, La Salle V8 . . . 1933—Crank the engine until No. 1 piston in the right bank is coming up on its compression stroke and the mark C 1/4 on the flywheel registers with the pointer at the peep hole. In this position the exhaust valve tappet for No. 1 cylinder in the right bank should be tight and the valve about to open. The punch marks on the camshaft and crankshaft sprockets should register with a line through the centers of the shafts.

V8 . . . 1934—With No. 1 exhaust valve in the right bank set at .010" clearance, crank the engine until No. 1 piston in the right bank is coming up on its exhaust stroke and the mark C/4 on the flywheel registers with the pointer at the peep hole. Number 1 exhaust valve in the right bank should now be just about closed with the valve tappet still tight. The punch marks on the camshaft and crankshaft sprockets should register with a line through the centers of the shafts. (*See La Salle for 1934.*)

V12, V16 . . . 1933—The valves have a hydraulic automatic take up for the clearance. To adjust the valves, loosen the rocker arm adjusting screw lock nut. Push the plunger down until the bottom of the hole is on a level with or slightly below the upper edge of its dash pot. Turn the adjusting screw down until all clearance is taken up at both ends of the

rocker arm. Release the plunger and back off the adjusting screw until the shoulder on the plunger is flush with the dash pot. Tighten the adjusting screw lock nut. Crank the engine until No. 1 piston in the left bank is coming up on its exhaust stroke and the line marked C 1/11 on the V12 (C 1/15 on the V16) registers with the pointer at the peep hole. In this position the intake valve for No. 1 cylinder in the left bank should be about to open.

V12, V16...1934—The valves have a hydraulic automatic take-up for clearance. To adjust the valves, loosen the rocker arm adjusting screw lock nut. Push the plunger down until the bottom of the hole is on a level with or slightly below the upper edge of its dash pot. Turn the adjusting screw down until all clearance is taken up at both ends of the rocker arm. Release the plunger and back off the adjusting screw until the shoulder on the plunger is flush with the dash pot. Tighten the adjusting screw lock nut. Crank the engine until No. 1 piston in the left bank reaches top dead center of its exhaust stroke when the line marked C 1/11 on the V12 (C 1/15 on the V16) registers with the pointer at the peep hole. Number 1 intake valve in the left bank of cylinders should now just open.

CHEVROLET

1930, 1931, 1932—The peep hole is in the right front side of the flywheel housing. Crank the engine until No. 6 cylinder is coming up on the compression stroke. When the piston reaches TDC the line DC 1-6 on the flywheel will be in line with the pointer on the peep hole and No. 1 intake valve tappet will be tight and the valve about to open.

To set the camshaft, remove the gear cover plate. The camshaft and crankshaft gears each have a punch mark and the two must line up.

1933—With No. 1 intake valve set at .010" clearance, crank the engine until No. 1 piston is coming up on its exhaust stroke and the DC 1-6 mark on the flywheel is within one tooth of the pointer at the peep hole. In this position No. 1 intake valve tappet should be tight and the valve about to open. The camshaft and crankshaft gears have punch marks which must mesh.

1934—With No. 1 intake valve set at .010" clearance, crank the engine until No. 1 piston is coming up on its exhaust stroke and the DC 1-6 mark on the flywheel is 1½ teeth from the center of the peep hole. Number 1 intake valve tappet should now be tight with the valve about to open. The camshaft and crankshaft gears have punch marks which must mesh.

CHRYSLER, DODGE, DE SOTO, PLYMOUTH

The recommended method of setting the camshaft on these cars is by piston position as determined by a timing gauge—or a surface gauge may be used if the head is off. These cars had no marks on the flywheel in 1930, 1931 and part of 1932. But marks are found on the later cars.

One type of timing gauge is inserted in the ⅛-inch pipe plug hole in the rearmost cylinder. Another type is inserted through the spark plug hole in the last cylinder.

Crank the engine until the rearmost piston is coming up on its compression stroke and keep cranking until the piston is a few thousandths past top dead center as stated in the following paragraphs. At this point, No. 1 intake valve should be tight and the valve about to open. If timing is incorrect, reset the camshaft sprocket so that the marks line up with centers of the shafts.

1930—Piston position past top dead center should be: Chrysler 66, .014"; Chrysler 70, .017"; Chrysler 77, .017"; Chrysler Imperial 8, .017"; De Soto 6 and 8, .014"; Dodge 6, .014"; Dodge 8, .0035"; Plymouth, .008".

1931—Chrysler 6, .015"; Chrysler 66, .014"; Chrysler 8, .014"; Chrysler Imperial 8, .017"; De Soto 6 and 8, .014"; Dodge 6, .0144"; Dodge 8, .014"; Plymouth, .000" (top dead center).

1932—Chrysler 6, .015"; Chrysler 8, .014"; Chrysler Imperial 8, .017"; Chrysler Imperial Custom 8, .017"; De Soto 6, .014"; Dodge 6, .015"; Dodge 8, .014"; Plymouth, .0166".

Chrysler 6, De Soto 6, Dodge 6...1933—Remove the ⅛" pipe plug from the cylinder head over No. 6 piston and insert a gauge. With No. 1 intake valve set at .011" clearance, crank the engine until No. 6 piston comes up on its exhaust stroke and is .015" past TDC. In this position No. 1 intake valve tappet should be tight and the valve about to open. The punch marks on the camshaft and crankshaft should be in alignment with the centers of the shafts.

Chrysler Royal 8...1933—Remove the ⅛" pipe plug from the cylinder head over No. 8 piston and insert a gauge. With No. 1 intake valve set at .011" clearance, crank the engine until No. 8 piston comes up on its exhaust stroke and is .015" past TDC. In this position No. 1 intake valve tappet should be tight and the valve about to open. The punch marks on the camshaft and crankshaft sprockets should be in alignment with the centers of the shafts.

Chrysler Imperial 8...1933—The adjustments are the same as described for Chrysler Royal 8 except that the engine is cranked until the piston is .014" past TDC.

Chrysler Imperial Custom 8...1933—The adjustments are the same as described for Chrysler Royal 8 except that No. 1 intake valve clearance is set at .008" and the engine is cranked until the piston is .017" past TDC.

Dodge 8...1933—The adjustments for this car are the same as described for the Chrysler Royal 8 except that the engine is cranked until the piston is .014" past TDC.

Plymouth 6...1933—With No. 1 intake valve set at .011" clearance, crank the engine until No. 6 piston comes up on its compression stroke and is .014" past TDC. In this position No. 1 intake valve tappet should be tight and the valve about to open. The punch marks on the camshaft and crankshaft sprockets should be in alignment with the centers of the shafts.

Chrysler 6...1934—Set No. 6 intake valve at .010" clearance. Use a timing indicator in the timing hole over No. 6 cylinder. Crank the engine until No. 6 piston reaches top dead center of its exhaust stroke. Number 6 intake valve tappet should now be tight with the valve about to open. The punch marks on the camshaft and crankshaft sprockets should register with a line through the centers of the shafts.

Chrysler 8, Imperial 8...1934—Valve tappets can be adjusted after removing the right front wheel and the wheel housing cover. The opening provided will permit removal of the valve tappet covers and access to the tappets. Set No. 8 intake valve at .011" clearance. Crank the engine until No. 8 piston is coming up on its exhaust stroke and is .002" before top dead center. Number 8 intake valve tappet should now be tight with the valve about to open. The punch marks on the camshaft and crankshaft sprockets should register with a line through the centers of the shafts.

For sustained high speed driving, .002" additional clearance is recommended for the exhaust valves.

De Soto 6...1934—Valve tappets can be adjusted after removing the right front wheel and the wheel housing cover. The opening provided will permit removal of the valve tappet covers and access to the tappets. Set No. 6 intake valve at .011" clearance. Crank the engine until No. 6 piston reaches top dead center of its exhaust stroke. Number 6 intake valve tappet should now be tight with the valve about to open. The punch marks on the camshaft and crankshaft sprockets should register with a line through the centers of the shafts.

Dodge 6, Plymouth 6...1934—Set No. 6 intake valve at .011" clearance. Use a timing indicator in the timing hole over No. 6 cylinder. Crank the engine until No. 6 piston comes up on its exhaust stroke and is .015" past top dead center. Number 6 intake valve tappet should now be tight with the valve just about to open. The punch marks on the camshaft and crankshaft sprockets should register with a line through the centers of the shafts.

ESSEX

1930, 1931, 1932—The peep hole is on the right front side of the flywheel housing. Remove No. 6 spark plug and crank the engine until No. 6 piston is coming up on the compression stroke. Crank until the piston passes TDC and the line IO on the flywheel registers with the pointer on the peep hole. At this point No. 1 intake valve tappet should be tight and the valve about to open.

To set the sprockets, remove the chain case cover. The sprockets each have a punch mark. When Nos. 1 and 6 pistons are at TDC there should be 21 links between the marks on the sprocket, with pins Nos. 1 and 21 in the teeth with the marks. The chain is adjusted the same as the Hudson 8.

Terraplane 6, Hudson Super 6...1933—With No. 1 intake valve set at .006" clearance, crank the engine until No. 6 piston comes up on its compression stroke and the line marked IO on the flywheel registers with the pointer at the peep hole. In this position No. 1 intake valve tappet should be tight and the valve about to open. The camshaft and crankshaft gears have punch marks that must mesh.

Terraplane 8...1933—The adjustment is the same as described for the Essex Terraplane 6 except that the engine is cranked until No. 8 piston comes up on its compression stroke. The camshaft gears have timing marks on their rims which must mesh.

FORD

A...1930, 1931, 1932—There are no marks on the flywheel. Crank the engine until all pistons are 2⅛" from the top of

VALVE TIMING.

the cylinder block At this point valves Nos 3 and 8 should be open and Nos 1 and 6 push rods should be resting on the heels of their cams Valve No 1 is the front valve and No 8 the rear

To set the camshaft, remove the gear cover plate The camshaft gear rim has a punch mark which should mesh with the tooth on the crankshaft gear marked "Ford" This setting can be checked without removing the radiator.

B...1933—There are no marks on the flywheel. When the timing punch marks on the camshaft and crankshaft gears mesh, the timing of the valves is correct provided the clearance is correct When the tooth on the camshaft gear which carries a punch mark meshes with the tooth on the crankshaft gear marked Ford, the timing of the valves is correct.

V8...1933—There are no marks on the flywheel. When the timing punch marks on the camshaft and crankshaft gears mesh, the timing is correct provided the valve clearances are correct If the clearance is too small, the valve stem must be ground off until it is correct If it is too great, the valve must be ground into its seat until the clearance is correct

V8...1934—There are no marks on the flywheel When the timing punch marks on the camshaft and crankshaft gears mesh, the timing is correct, provided the valve clearances are correct If the clearance is too small, grind the valve step If it is too great, grind the valve into its seat.

The new valve construction permits the removal of the valve, valve guide, valve spring and valve spring retainer as a unit after the valve guide bushing retainer has been removed A bar type valve lifter is available which can be inserted through the valve spring to the flange on the lower end of the valve guide bushing This permits the valve guide bushing to be pulled down sufficiently to remove the guide bushing retainer, after which the assembly can be withdrawn from above.

FRANKLIN

145, 147...1930—Remove No 1 spark plug and crank the engine until No 1 piston is coming up on the compression stroke and continue until it is at TDC Set the intake valve at 031" clearance Then insert a 005" feeler gauge under the valve stem Turn the crankshaft almost one revolution, until the same tension is secured on the 005" feeler gauge as was on the 031" gauge At this point the △ mark on the fan rim should be from 7/8" to 1¾" beyond the mark on the fan housing When the △ mark on the fan rim is in line with the mark on the fan housing, Nos 1 and 6 pistons are at TDC

To inspect the chain remove the chain inspection hole plug on the top of the chain case Insert a wire, bent at a right angle ½" from the end, and hook it under the chain There should be ⅜" to ½" up and down play in the wire To adjust the chain loosen the generator fastening screws and swing the generator When the "O's" on the face of the camshaft flange and the camshaft sprocket are in alignment, the "2's" on the camshaft and camshaft sprockets should be in line with the centers of the shafts

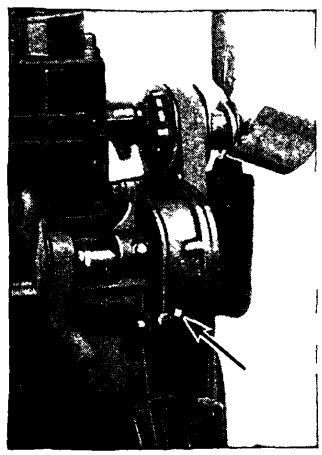
6, 1931, 1932, 1933; Olympic 1933—Crank the engine until No 6 exhaust valve closes and continue until the "O" on the fan rim registers with the line stamped on the fan housing Adjust the intake valve tappet so that the clearance is 036" Then insert a 005" feeler gauge under the valve stem in place of the 036" gauge Crank the engine almost one revolution until the same tension is secured on the 005" gauge as was on the 036" gauge At this point the "O" mark on the fan rim should be from 3 3/16" to 4 3/16" beyond the line in the fan housing If not within these limits, align the "O s" on the face of the camshaft flange and the camshaft sprocket and then bring into alignment the two '2's" on the face of the crankshaft and camshaft sprockets Chain tension is adjusted by swinging the generator

12...1933—Crank the engine until No. 6 exhaust valve in the right bank closes and continue until the first O mark on the fan rim registers with the line stamped on the fan housing Adjust No 1 intake valve in the right bank to 036" clearance Then insert a 005" feeler gauge under the valve stem in place of the .036" gauge Crank the engine almost one revolution until the same tension is secured on the 005" gauge as on the gauge when making the 036" setting In this position the first O mark on the fan rim should be from 2¼" to 2¾" beyond the line stamped on the fan housing Then check the setting for the left bank in a similar manner using feeler gauges on No 6 intake valve when No 1 exhaust valve closes and using the second O mark in the fan rim Align the O s on the camshaft flanges and sprockets and align the No 1 and No. 2 marks on the camshaft sprockets with the No 1 and No 2 marks on the crankshaft sprockets.

GRAHAM

1930—The peep hole is in the left front side of the flywheel housing Crank the engine until the rearmost piston reaches TDC on the compression stroke At this point the DC 1-6 or 1-8 mark on the flywheel should be directly under the pointer on the peep hole and No 1 intake valve tappet tight and the valve about to open

To set the sprockets, remove the chain case cover The sprockets have punch marks which should be 14 links apart when No 1 piston is at TDC. To adjust the chain loosen the screws that hold the flange holding the water pump shaft. Run the engine at a speed approximately 25 m p h and turn the adjusting screw at the bottom of the flange until the chain whines Turn the screw in the opposite direction until the whine just stops and tighten the fastening screws and the adjusting screw lock nut.



6, 1931, 1932, 1933; 8...1931—Crank the engine until No 1 piston is coming up on its compression stroke and continue until the rearmost exhaust valve is just closed At this point the mark EXCL 1-6 or 1-8 on the flywheel should be opposite the pointer on the peep hole If the mark is not more than two teeth from the pointer the timing is correct The intake valve opens when the piston is at top dead center The chain on the sixes and special eight is adjusted the same as on 1930 Grahams On the custom eight the punch marks should be 14 links or 15 pins apart when the piston is at TDC.

8...1932, 1933—Crank the engine until No 1 piston is coming up on its compression stroke and continue until the exhaust valve for No 8 cylinder is entirely closed At this point the mark EC-1 on the flywheel should be opposite the pointer in the flywheel peep hole The pointer should not be more than two teeth out of the way

Tension on the timing chain is increased by loosening the two bolts at the rear of the timing case, around the water pump shaft, and turning the screw at the bottom in With No 1 piston at TDC there should be 10 links between the punch marks on the camshaft and crankshaft sprockets

6...1934—With No 6 exhaust valve set at 012" clearance, crank the engine until No 1 piston comes up on its compression stroke and the EC1 mark on the flywheel is opposite the pointer at the peep hole Number 6 exhaust valve should now be just closed, with the valve lifter loose There should be 10 links between the punch marks on the camshaft and crankshaft sprockets, measured on lower side of the chain.

Standard 8, Custom 8...1934—With No 8 exhaust valve set at 012" clearance, crank the engine until No 1 piston comes up on its compression stroke and the EC1 mark on the flywheel is opposite the pointer at the peep hole Number 8 exhaust valve should now be just closed, with the valve lifter loose There should be 10 links between the punch marks on the camshaft and crankshaft sprockets, measured on the lower side of the chain

HUDSON

8...1930, 1931, 1932—The peep hole is on the right front side of the flywheel housing, remove No 8 spark plug and crank the engine until No 8 piston is coming up on the compression stroke Crank until the piston passes TDC and the line IO on the flywheel registers with the pointer on the peep hole At this point No 1 intake valve tappet should be tight and about to open

To set the sprockets, remove the chain case cover When Nos 1 and 8 pistons are at TDC there should be 21 links between the sprocket punch marks with pins Nos 1 and 21 in the teeth with the marks The chain is adjusted by moving an eccentric With the slack around the generator coupling taken up, there should be a to and fro movement of approximately ⅛" on the circumference of the coupling To adjust chain, loosen bolts in distributor bracket, the inside top bolt and bottom bolt pass through the notches in the eccentric, necessitating their re-

moval. Insert a wrench in one of the notches and turn toward you until only the required movement is present. If trouble is experienced in replacing the bolts, back off the adjustment slightly, allowing them to slide into place. One-half pint of engine oil should be introduced through the pipe plug opening whenever the distributor support housing has been removed.

Super 6 . . . 1933—(*See Essex.*)
8 . . . 1934—With No. 1 intake valve set at .010" clearance, crank the engine until No. 8 piston comes up on its compression stroke and the line marked 10 on a flywheel registers with the pointer at the peep hole. Number 1 intake valve tappet should now be tight and the valve about to open. The marks on the camshaft and crankshaft gears must mesh.

HUPMOBILE

S and A . . . 1930, Century 6 . . . 1931, 214, 216 . . . 1932, 321 . . . 1933—Remove No. 6 spark plug and crank the engine until No. 6 piston is at TDC, the DC 1-6 mark on the flywheel will be in line with the finished bosses on the right front face of the flywheel housing. At this point No. 1 intake valve tappet should be tight and the valve about to open.

The chain is adjusted by moving the generator. The punch marks on the camshaft and crankshaft sprockets should line up with the centers of the camshaft and crankshaft. The chain should be adjusted when the engine is running at a speed equivalent to 25 m.p.h. Move the generator until the chain whines and then loosen the chain until the whine just stops.

Century 8 . . . 1931, 218, 222 . . . 1932, 332 . . . 1933—Crank the engine until No. 8 piston is coming up on its compression stroke and continue until the 1-8 DC mark on the flywheel registers with the center of the peep hole. At this point both the intake and exhaust valves on No. 1 cylinder will be closed but with the intake valve about to open.

Each sprocket has a punch mark. Nine open links in the timing chain must separate these marks when No. 8 piston is at TDC of its compression stroke. There is no chain adjustment.

H, C, U . . . 1930, 1931, 221, 222, 225, 237 . . . 1932, 326 . . . 1933—The peep hole is on the right front side of the flywheel housing. Remove No. 8 spark plug and crank the engine until No. 8 piston is at TDC of the compression stroke. At this point the DC 1-8 mark on the flywheel is in line with the center line of the peep hole and No. 1 intake valve tappet should be tight and the valve about to open.

To inspect the chain, remove the chain case cover. To adjust the chain, run the engine at a speed equivalent to 25 m.p.h. and move the generator until the chain develops a hum and then loosen it until the hum just disappears. There should be 11 links between the "X" marks on the camshaft and crankshaft gears, which means that when No. 1 and 8 pistons are at TDC Nos. 1 and 12 pins should be in the marked teeth.

417, 421J . . . 1934—With No. 1 intake valve set at .014" clearance and No. 1 exhaust valve set at .017" clearance, crank the engine until No. 6 piston is coming up on its compression stroke and the line marked DC/1-6 on the flywheel registers with the finished bosses on the front face of the clutch housing. In this position, No. 1 intake and exhaust valves should be closed, with the valve lifters loose. The punch marks on the camshaft and crankshaft sprockets should register with a line through the centers of the shafts.

427 . . . 1934—With the clearance on the opening side for No. 1 intake valve set at .020" and the clearance on the closing side of No. 1 exhaust valve set at .026", crank the engine until No. 8 piston is coming up on its compression stroke and the line marked DC 1-8 on the flywheel registers with the center of the peep hole. In this position No. 1 intake and exhaust valves should be closed, with the valve lifter loose. There should be 9 links between the O marks on the camshaft and crankshaft sprockets, measured on upper side of chain.

LAFAYETTE

6 . . . 1934—When the punch marks on the camshaft and crankshaft sprockets register with a line through the centers of the shaft with No. 1 piston at top dead center of its compression stroke, the valve timing is correct.

LA SALLE

1930, 1933—(*See Cadillac.*)

8 . . . 1934—With No. 1 intake valve set at .010" clearance, crank the engine until No. 1 piston comes up on its exhaust stroke and the second line on the outside diameter of the vibration dampener is directly under the pointer on the chain case cover. The piston is now at top dead center and No. 1 intake valve tappet should be tight with the valve about to open. The marks on the camshaft and crankshaft sprockets should register with a line through the centers of the shafts.

LINCOLN

12-136, 145 . . . 1933, 1934—Crank the engine until No. 1 piston in the left bank is coming up on its compression stroke and the line marked DC 1-11 on the flywheel registers with the pointer at the peep hole. In this position the intake and exhaust valves for No. 1 cylinder should be closed with the clearance .003" and .005" respectively. The punch marks on the camshaft and crankshaft sprockets should register with the centers of the shafts.

MARMON

69 . . . 1930, 68, 70 . . . 1931—The peep hole is in the right side of the flywheel housing. Remove No. 8 spark plug and crank the engine until No. 8 piston is coming up on the compression stroke. Watch for the DC mark on the flywheel. When this mark is two teeth before the pointer on the peep hole, No. 1 intake valve tappet should be tight and the valve about to open.

To set the sprockets, remove the chain case cover. The sprocket punch marks should be in line with the centers of the camshaft and crankshaft. There is no chain adjustment.

79, Big 8 . . . 1930, 88 . . . 1931, 8-125 . . . 1932—The peep hole is in the right side of the flywheel housing. Remove No. 8 spark plug and crank the engine until No. 8 piston is coming up on the compression stroke. Watch for the DC mark on the flywheel. When this mark is in line with the pointer on the peep hole, No. 1 intake valve tappet should be tight and the valve about to open.

To set the sprockets, remove the chain case cover. The punch marks on the sprockets should be in line with the centers of the camshaft and crankshaft. There is no chain adjustment.

16 . . . 1933—With No. 1 exhaust valve in the left bank set at .014" clearance, crank the engine until No. 3 piston in the left bank is coming up on its compression stroke and the mark EXOP-1L registers with the pointer at the peep hole. In this position No. 1 exhaust valve tappet in the left bank should be tight and the valve about to open. The line between the O marks on the camshaft and crankshaft sprockets should register with a line through the centers of the shafts.

MARQUETTE

The peep hole is on the left front side of the flywheel housing. Crank the engine until No. 6 piston is coming up on the compression stroke and until the index line on the peep hole registers with the line IN on the flywheel, just before TDC. Now point No. 1 intake valve tappet should be tight and the valve about to open.

To set the sprockets, remove the chain case cover. The sprocket punch marks should be in line with the centers of the camshaft and the crankshaft. There is no chain adjustment.

NASH

Single 6 . . . 1930, 6-60, 8-70 . . . 1931, 960, 970 . . . 1932—The peep hole is just above the starting motor. Crank the engine until the rearmost piston is coming up on the exhaust stroke. When the pointer on the peep hole registers with the first line on the flywheel, the piston is at TDC and the rearmost exhaust valve tappet should be tight and the valve just closed.

To inspect the timing gears, remove the gear cover plate. The camshaft and crankshaft gears have punch marks which must mesh.

Twin Ignition 6 . . . 1930—There is a pointer on the timing gear case that registers with a notch in the front flywheel. Crank the engine until No. 6 piston is coming up on the exhaust stroke. When the pointer registers with the first notch in the front flywheel No. 6 exhaust valve tappet should be tight and the valve just closed.

To inspect the timing gears, remove the gear cover plate. The camshaft and crankshaft gears have punch marks which must mesh.

Twin Ignition 8 . . . 1930, 8-80, 8-90 . . . 1931, 980, 990 . . . 1932—There is a pointer on the timing gear case that registers with a notch in the front flywheel. Crank the engine until No. 8 piston is coming up on the exhaust stroke. When the pointer registers with the first notch in the front flywheel, No. 8 exhaust valve tappet should be tight and the valve just closed.

There is no chain adjustment. To set the sprockets remove the chain case cover. The sprockets have punch marks which should be in line with the centers of the camshaft and crankshaft.

Big 6, Standard 8, Special 8, Advanced 8, Ambassador 8 . . . 1933 . . . Big 6, Advanced 8, Ambassador 8 . . . 1933—When the punch marks on the camshaft and crankshaft sprockets register with a line through the centers of the shafts, with No. 1 piston at top dead center of its compression stroke, timing is correct.

OAKLAND

8 . . . 1930, 1931, Pontiac 8 . . . 1932—Peep hole is on the left front side of the

flywheel housing Crank the engine until No 1 cylinder is at TDC of the exhaust stroke At this point the pointer in the peep hole should register with the line DC 1-7 on the flywheel and No 1 intake valve tappet should be tight and the valve about to open

To set the sprockets, remove the chain case cover. The sprockets have punch marks which should be in line with the centers of the camshaft and crankshaft There is no chain adjustment.

OLDSMOBILE

6 . . . 1930, 1932, 8 . . . 1932—The peep hole is in the left rear engine arm support Remove No 1 spark plug and crank the engine until No. 1 piston is at TDC of the exhaust stroke At this point the pointer on the peep hole should be in line with the punch mark on the flywheel and the intake valve tappet tight and the valve about to open

To set the sprockets, remove the chain case cover The sprocket punch marks should be in line with the centers of the camshaft and crankshaft The chain is adjusted by loosening the generator screws and moving it To adjust the chain, move the generator until the chain whines and then move it in the opposite direction until the whine stops.

6, 8 . . . 1934—With No 1 intake valve set at 010" clearance, crank the engine until No 1 piston comes up on its exhaust stroke and the second line on the outside diameter of the vibration dampener is directly under the pointer on the chain case cover The piston is now at top dead center and No 1 intake valve tappet should be tight with the valve about to open The marks on the camshaft and crankshaft sprockets should register with a line through the centers of the shafts

PACKARD

8 . . . 1930, 1932, 1933—The pointer for checking the marks on the flywheel can be seen by removing the starting motor Remove No 1 spark plug and crank the engine until the piston is at TDC of the exhaust stroke At this point the pointer on the peep hole should line up with the DC 1-8 mark on the flywheel and the valve tappet should be tight and the valve about to open There is also an EC 1-8 mark on the flywheel so that the timing can be checked with the exhaust valve When this line registers with the pointer, the exhaust valve should be about to open

To inspect the chain, remove the inspection hole plug which is at the right forward end of the crankcase If the combined inward and outward deflection of the chain is ½" or greater, it should be tightened by moving the generator Move the generator until the chain whines and then loosen it until the whine just stops At this adjustment the deflection is ¼". When the peep hole pointer registers with the DC 1-8 mark on the flywheel you should align the two teeth marked O on the crankshaft sprocket with the two teeth marked O on the camshaft sprocket and the centers of the shafts.

12 . . . 1933—The valves have hydraulic automatic takeup so that the clearance does not have to be adjusted The O marks on the camshaft and crankshaft sprockets should be in alignment with a line through the centers of the shafts

8, Super 8 . . . 1934—With No 1 exhaust valve set at 005" clearance, crank the engine until No 1 piston comes up on its exhaust stroke and the EC 1-8 mark on the flywheel registers with the pointer at the peep hole Number 1 exhaust valve should now be closed, with the valve tappet loose The O marks on the camshaft and crankshaft sprockets should register with a line through the center of the shafts

12 . . . 1934—The valves have a hydraulic automatic take-up so that the clearance does not have to be adjusted Crank the engine until No 1 piston is at top dead center of its exhaust stroke when No 1 intake valve should just start to open The O marks on the camshaft and crank shaft sprockets should register with a line through the centers of the shafts

PEERLESS

Standard 8 . . . 1930, 1931—The peep hole is in the right front side of the flywheel housing Crank the engine until No 1 piston is coming up on the exhaust stroke and just passes TDC When the pointer on the peep hole registers with the line 1 EC on the flywheel, No 1 exhaust valve tappet should be tight but the valve just closed

To set the sprockets, remove the chain case cover For proper setting there should be 13 links between the punch marks, with pins Nos 1 and 14 resting in the marked teeth The chain is adjusted by moving the generator until the chain whines and then loosening it until the whine just stops.

Master and Custom 8 . . . 1930, 1932—The peep hole is in the left front side of the flywheel housing Crank the engine until No. 1 piston is coming up on the exhaust stroke and just passes TDC When the pointer on the peep hole registers with the line 1 EC on the flywheel No 1 exhaust valve tappet should be tight but the valve just closed

To set the sprockets, remove the chain case cover The sprocket punch marks should have 10 links between them, with pins Nos 1 and 11 resting in the teeth that are marked Fig 3. There is no chain adjustment

PIERCE-ARROW

1930, 1932—Peep hole is on the right side of the flywheel housing Crank the engine until No 1 intake valve just opens after No 1 exhaust valve has closed At the point the mark $\frac{IN\text{-}OP}{1\text{-}3}$ on the flywheel is centered with the pointer on the peep hole

To set the sprockets, remove the chain case cover The sprockets have punch marks which should be in line with the centers of the camshaft and crankshaft There is no chain adjustment

836 . . . 1933—As the engine is equipped with automatic hydraulic valve lifters, it is necessary to remove No 1 intake hydraulic lifter. Pull out the plunger, remove the spring and wash the lifter assembly in clean gasoline Reinstall the plunger into the lifter and reinstall into the bracket The plunger will now have about 070" clearance with the end of the valve stem with the valve in a closed position This clearance should be checked, however, and sufficient stock inserted to take up all but 010". Crank the engine until No 1 piston is coming up on its exhaust stroke and the IN-OP/1-8 mark on the flywheel registers with the pointer at the peep hole In this position No 1 intake valve tappet should be tight and the valve about to open The single mark on the crankshaft sprocket should align midway between the two marks on the camshaft and with a line through the centers of the shafts

1236, 1242, 1247 . . . 1933—The same type of valve lifter is used as described for Pierce-Arrow 836 The same procedure is followed except that in obtaining the clearance or checking, 004" clearance should be allowed instead of 010" As on model 836, the flywheel is marked to indicate the opening of No 1 intake valve in the left bank

840A . . . 1934—Automatic hydraulic valve lifters are used and to check the valve timing No 1 intake hydraulic lifter should be removed Pull out the plunger, remove the spring and clean the lifter assembly with gasoline Reinstall the plunger in the lifter and then in the bracket The plunger will now have about 070" clearance at the end of the valve stem with the valve closed This clearance should be checked, however, and sufficient stock inserted to take up all but 010" Crank the engine until No 1 piston is coming up on its exhaust stroke and the IN-OP/1-8 mark on the flywheel registers with the pointer at the peep hole Number 1 intake valve should now just start to open The mark on the crankshaft sprocket should align midway between the two marks on the camshaft sprocket and with a line through the centers of the shafts.

1240A, 1248A . . . 1934—The same procedure described for Pierce-Arrow 840A should be followed except that in obtaining the clearance for checking, 004" clearance should be allowed instead of 010" The flywheel is marked to indicate the opening of No 1 intake valve in the left bank

PLYMOUTH

(*See Chrysler*)

PONTIAC

6 . . . 1930, 1931, 1932—Peep hole is on the left front side of the flywheel housing Crank the engine until No 6 cylinder is at TDC of the compression stroke At this point the pointer in the peep hole should register with the DC 1-6 line on the flywheel with No 1 intake valve tappet tight and the valve about to open

To set the sprockets, remove the chain case cover The sprockets have punch marks which should be in line with the centers of the camshaft and crankshaft There is no chain adjustment

8 . . . 1932—(*See Oakland*)

8 . . . 1933—There are no marks on the flywheel for valve timing as a 5-degree range in spark setting is indicated between the two lines IGN 1&8 The lower mark is 9 degrees before TDC and the second mark is 4 degrees before TDC The intake valve opens 5 degrees before TDC, during this range With No 1 intake valve set at 010", crank the engine until No 1 piston is coming up on its exhaust stroke and the second mark on the flywheel nearly registers with the pointer at the peep hole In this position No 1 intake valve tappet should be tight and the valve about to open The punch marks on the camshaft and crankshaft

sprockets should be in alignment with the centers of the shafts.

8...1934—There are no marks on the flywheel for valve timing as a 5-degree range for ignition timing is indicated between the lines on either side of the IGN-1&8 mark and the intake valve opens when the pointer is between these lines. The first line is 9 degrees before top dead center and the second line is 4 degrees before top dead center. With No. 1 intake valve set at .010" clearance, crank the engine until No. 1 piston is coming up on its exhaust stroke and the second line is almost up to the pointer at the peep hole. Number 1 intake valve tappet should now be tight with the valve about to open. The punch marks on the camshaft and crankshaft sprockets should register with a line through the centers of the shafts.

REO

Flying Cloud 15, Mate, Wolverine... 1927, 1928, 1929, 1930, 1931—Remove the small plug over No. 6 piston and insert a gauge. The markings on the flywheel can be seen through the peep hole in the flywheel housing under the floor-board. Crank the engine until No. 6 inlet valve tappet is tight and the valve just starts to open. At this point the gauge should show the piston .008" past TDC and the DC mark on the flywheel ½" past the line in the flywheel housing.

To set the sprockets, remove the chain case cover. The camshaft and crankshaft sprocket punch marks should have 12 chain pins between the marks—with Nos. 1 and 12 pins resting in the teeth carrying the marks. The chain is adjusted by moving the generator. It should be tightened until there is a whine and then loosened until the whine just stops.

Flying Cloud, Master, 20, 25...1928, 1929, 1930, 1931, 6-21...1932—Remove No. 6 spark plug and insert a gauge. Crank the engine until No.1 intake valve tappet is tight and the valve about to open. At this point the piston should be at TDC and the UDC mark on the flywheel should line up with the line at the peep hole on the right front side of the flywheel housing. Allowance of ½" either way on the flywheel.

The chain is adjusted by moving the generator. There are zero marks on the camshaft and crankshaft sprockets and these should line up with the centers of the crankshaft and camshaft. The chain is adjusted by moving the generator until the chain whines and then loosening it until the whine stops.

S...1933—With No. 1 intake valve clearance set at .012", crank the engine until No. 6 piston comes up on its compression stroke and the UDC mark on the flywheel registers with the line at the peep hole in the right rear engine leg. In this position No. 1 intake valve tappet should be tight and the valve about to open. The punch marks on the camshaft and crankshaft sprockets should be in alignment with the centers of the shafts.

821, 8-20, 21, 25...1931, 1932—Remove the cover from the peep hole in the top of the flywheel housing. Crank the engine until No. 8 piston is coming up on its compression stroke and the line on the flywheel marked INTAKE OPENS registers with the line at the peep hole. At this point No. 1 intake valve tappet should be tight and the valve about to open.

30, 31, 35...1931, 1932, 1933—Remove the cover from the peep hole in the top of the flywheel housing. Crank the engine until No. 8 piston is coming up on its compression stroke and the line marked UDC on the flywheel registers with the line on the peep hole. At this point No. 1 intake valve tappet should be tight and the valve about to open. Due to the special design of the camshaft it is necessary to adjust the valve tappets in the regular firing order, 16258374, both valve tappets for one cylinder being adjusted when the piston is on its compression stroke.

S, Royale...1934—With No. 1 intake valve set at .012" clearance, crank the engine until No. 1 piston reaches top dead center of its exhaust stroke. The flywheel is marked UDC. Number 1 intake valve tappet should now be tight with the valve about to open. The punch marks on the camshaft and crankshaft sprockets should register with a line through the centers of the shafts. Due to the design of the camshaft on the Royale, it is necessary to adjust the valve lifters in the regular firing order, 16258374. When the piston is on its compression stroke both valves should be adjusted.

ROCKNE

6...1933—With No. 1 intake valve set at .010", crank the engine until No. 1 piston is coming up on its exhaust stroke and the punch marks ½" before the UDC 1-6 mark on the flywheel registers with the pointer on the forward side of the engine rear plate directly below the starting motor. In this position No. 1 intake valve tappet should be tight and the valve about to open. The punch marks on the camshaft and crankshaft sprockets should be in alignment with the centers of the shafts.

STUDEBAKER

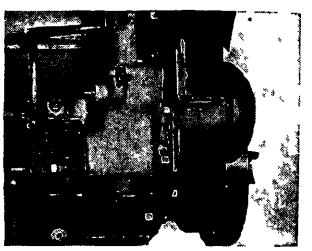
6...1930, 1932, 1933, Commander 6, Dictator 6, Erskine 53...1930—The peep hole is on the right front side of the flywheel housing. Crank the engine until No. 1 piston reaches TDC on the exhaust stroke. At this point the screw that holds the plate on the peep hole should be in line with the DC 1-6 mark on the flywheel and the exhaust valve just closed.

To set the sprockets, remove the chain case cover. The sprockets have punch marks which should be in line with the centers of the camshaft and crankshaft, The chain is adjusted by moving an eccentric. Crank the engine half a revolution to take up the slack in the chain. Do not let the engine rock back on compression after doing this. There should now be about ⅛" movement on the fan pulley rim. To tighten the chain, loosen the bolts that hold the accessory shaft bracket. After backing off the locking nut, the adjusting screw should be tightened. Tightening the screw draws out the bracket and sprocket, taking the slack out of the chain. After tightening the lock nuts and bolts, try fan pulley to make certain that there is still sufficient slack in the chain.

Dictator, Commander and President 8's...1930, 1932, 1933—The peep hole is in the left front side of the flywheel housing. Crank the engine until No. 1 piston is coming up on the exhaust stroke and until it reaches TDC. At this point the screw that holds the plate on the peep hole should be in line with the DC 1-8 mark on the flywheel and the exhaust valve just closed.

To inspect the timing gears, remove the gear cover plate. The camshaft and crankshaft gears punch marks must mesh.

Dictator 6, Commander 8, President 8 ...1934—With No. 1 intake valve set at .010" clearance, crank the engine until No. 1 piston is coming up on its exhaust stroke and the UDC mark on the flywheel is about 4½ teeth before the pointer at the peep hole. Number 1 intake valve tappet should now be tight with the valve about to open. The punch marks on the camshaft and crankshaft sprockets or gears should register with a line through the centers of the shafts.



TERRAPLANE

1933—(*See Essex.*)

6—The procedure is the same as described for Hudson 8 except that No. 6 piston is on its compression stroke.

VIKING

1930—Tappet clearance *running:* Intake .008" hot; exhaust .012" hot. Tappet clearance *timing* .012".

There are no marks on the flywheel. Remove No. 1 spark plug (right front cylinder) and insert a gauge. Crank the engine until No. 1 piston reaches TDC of the exhaust stroke. At this point No. 1 intake valve tappet should be tight and the valve about to open.

To set the sprocket, remove the chain case cover. The sprockets have punch marks which should be in line with the centers of the camshaft and crankshaft. There is no chain adjustment.

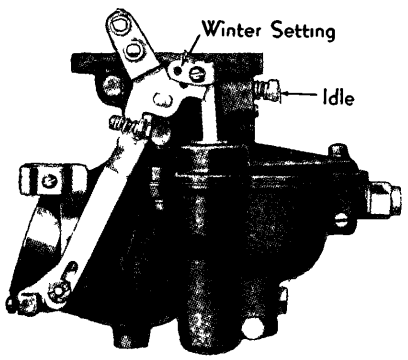
WILLYS

77...1933—With No. 1 intake valve set at .010" clearance, crank the engine until No. 4 piston is coming up on its compression stroke and the mark 10 on the flywheel registers with the pointed end of the inspection plate screw at the peep hole in the left top side of the flywheel housing. In this position No. 1 intake valve tappet should be tight and the valve about to open. The punch marks on the camshaft and crankshaft sprockets should register with the centers of the shafts.

WILLYS-KNIGHT

66A, 66B...1932—Remove the inspection plug in the exhaust manifold, opposite No. 6 cylinder or remove the exhaust manifold and scrape all carbon from the edges of the exhaust ports. Remove the floor board and clutch inspection plate to locate the peep hole in the rear of the flywheel housing. Remove No. 6 spark plug and insert a small electric light in the spark plug hole. Crank the engine until, with the exhaust port closing, a narrow line of light is just discernible between the upper edge of the port in the outer sleeve and the lower edge of the port in the cylinder block. At this point the mark EC on the flywheel should be in alignment with the pointer on the peep hole. Should the mark be more than ⅜" past the pointer, the sleeves must be retimed. If no light is available, the exact closing of the port may be determined by a .0015" feeler gauge. Chain tension is automatically adjusted.

CARBURETORS...



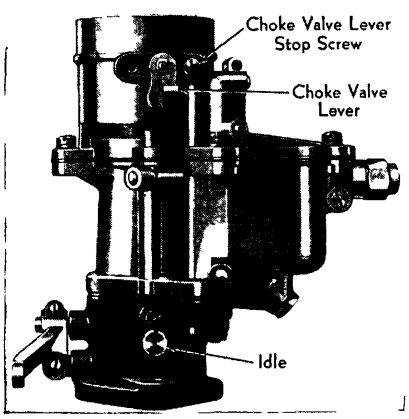
BALL AND BALL

Updraft... 1932—This type carburetor has an idle adjustment and an adjustment to regulate the charge delivered by the accelerating pump Turning the idle mixture adjusting screw in, clockwise, gives a richer mixture

Changing the hole that the accelerating pump rod is in changes the charge delivered by the pump In winter it should make the longest stroke possible so that it will deliver a large charge In summer the piston stroke should be short

C6A, E6A... 1933—There is an idle mixture adjustment and an adjustment to regulate the charge delivered by the accelerating pump Turning the idle mixture adjustment screw in, clockwise, gives a leaner mixture Normally the correct setting is ½ to 1¼ turns open

The pump link is provided with two holes for the pump link screw The link screw should be in the outer hole, giving the longer stroke, in winter and in the inner hole in summer.



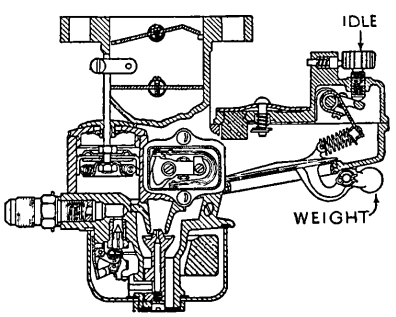
E8A... 1934—Adjustments are the same as described for model E6A Normally the correct setting of the idle screw is ⅝ to 1¼ turns open

E6C1, E6B1, C6B1... 1934—If the carburetor loads up after considerable service, check the float level Wear on the lip of the float lever will raise the float level Before adjusting the float, be sure that the float lever pin plug is firmly seated Bending the lip of the float lever away from the needle raises the float level and bending the lip toward the needle lowers the float level Bend the vertical lip of the float only The top of the float should be 5/64" below the surface of the carburetor body casting

If the engine stalls while idling, set the throttle lever adjusting screw so that the engine runs approximately 300 r p m Then set the idle adjusting screw ½ to 1¼ turns open Turning the idle screw out counterclockwise, makes the mixture richer If these adjustments do not correct the trouble remove the idle orifice tube and plug assembly and clean it with compressed air

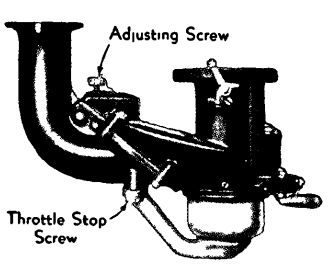
When acceleration is not satisfactory, remove the pump jet and clean it with compressed air Also examine the pump link setting The pump link has three holes, giving the pump a short, medium or long stroke If the link is set to the short stroke, reset it to give a longer stroke In hot weather, high altitudes or when high test gasoline is used connect the pump link in the hole giving the shortest stroke

The main metering screw can be replaced with leaner than standard metering screws for high altitudes or high test fuels



CADILLAC AND LaSALLE

1931—There is only one adjustment, the auxiliary air valve adjustment Turning the screw in, clockwise, makes the mixture richer The mixture can be tested by pressing the counterweight on the air valve gently up or down If the engine speed decreases when the weight is pressed up or down, the mixture is correct If the speed increases when it is down, the mixture is too rich If the speed increases when it is up the mixture is too lean

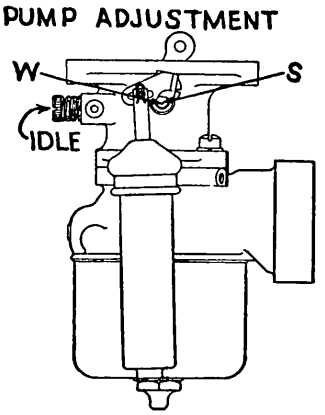


1932—A new type of thermostat is used on the throttle pump which requires no adjustment

The carburetor is adjusted by means of the knurled screw on top of the auxiliary air valve housing the same as formerly Turning the screw in, clockwise, gives a richer mixture

The arrangement of choke and auxiliary air thermostat is entirely different It should not be necessary to adjust the choke or to reset the air thermostat unless these parts have been tampered with

1934—The carburetor has but one adjustment, the air valve Turning the adjusting screw in, clockwise gives a richer mixture

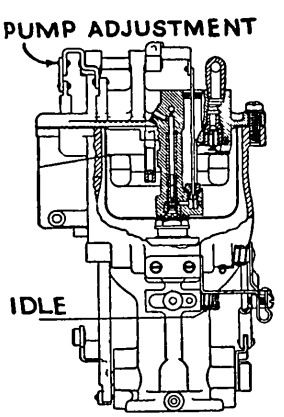


CARTER

Updraft 1931—These carburetors have an idle adjustment and an adjustment to regulate the charge delivered by the accelerating pump Turning the idle adjusting screw in, clockwise, produces a richer mixture Normal setting is from ¾ to 1¼ turns from the closed position

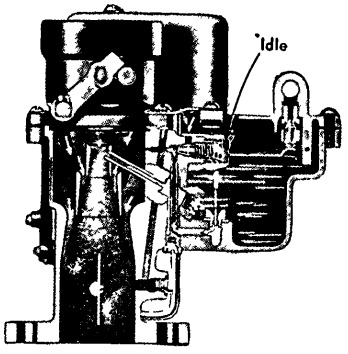
The main metering jet has a fixed opening and if due to atmospheric conditions or the grade of fuel used, the standard jet does not give satisfactory results, a special jet must be installed

In the summer, when a small charge is required from the accelerating pump, the rod should be in the hole marked 'S,' giving the pump a short stroke In the winter the rod should be in the hole W" For normal conditions the rod should be in the center hole

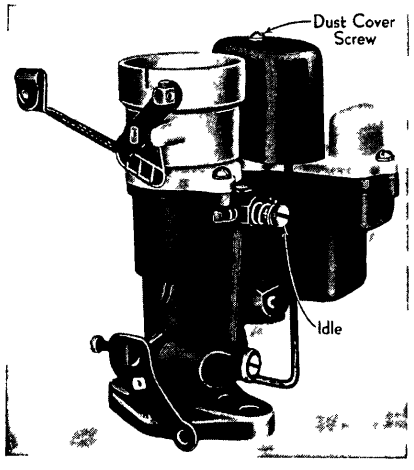


167SR Down-Draft... 1931—There is only one mixture adjustment the idle adjustment The normal setting for this screw is about ¾ turn open from its closed position Turning the screw in, clockwise makes the mixture richer The size of the charge delivered by the accelerating pump can be altered by changing the position of the pump rod in the lever When the pin is in the hole marked 'W" the charge is largest, for winter When the pin is in the hole marked 'S" the charge is smallest, for summer

1932—There is only one mixture adjustment, the idle adjustment When adjust-



ing the idling mixture, open the adjusting screw from ½ to 1 turn Turning the adjusting screw in, clockwise, makes the mixture richer The lever which operates the accelerating pump is provided with three adjustments The first hole gives the longest stroke to the piston and is for winter driving The center hole is for normal temperatures and the third hole is for summer.



259S . . . 1933—There is an idle mixture adjustment and an adjustment to regulate the charge delivered by the accelerating pump Turning the idle screw out, counterclockwise, gives a leaner mixture Normally the correct setting is ½ to 1 turn open If a good idle cannot be obtained with this adjustment, remove the low speed jet tube and clean it thoroughly with compressed air Examine the soldered joint in the tube for leaks and see that the tube seats are air tight in the body casting

The accelerator pump arm is provided with three holes for the pump connector link, giving short, medium and long strokes. The long stroke is correct for standard gasoline Shorter strokes should be used for extremely hot climates, high altitudes or with high test fuel The countershaft that operates the accelerator pump should be lubricated every 5,000 miles To do this remove the dust cover attaching screw and fill the threaded hole with a good grade of graphite grease

Each carburetor is calibrated to provide maximum power and mileage on standard gasoline in normal altitudes Leaner than standard fuel mixtures are obtainable by the use of special metering rods. Great care must be used in changing metering rods. Remove the dust cover, take off pin spring and turn the rod ¼ turn counterclockwise to disengage it from the pump arm Be careful not to lose disc on rod Insert new rod with disc, holding it vertical to insure the rod entering the jet in the float chamber With throttle closed, turn rod ¼ turn to engage pin on pump arm If lower end of rod is in place in jet, rod will engage pin on pump arm readily and hang vertical from pin Any difficulty in reassembling will indicate rod has not entered jet, in which case the carburetor will not function With metering rod in place hook on spring which holds rod steady

267S . . . 1934—Adjustments are the same as described for the model 259S Normally the correct setting for the idle screw is ¾ to 1¼ turns open

The medium stroke of the accelerating pump is correct for ordinary temperatures and standard fuel The long stroke is used in extremely cold climates while the short stroke is used for extremely hot climates, high altitudes or high test fuel

261S . . . 1934—Adjustments are the same as described for model 267S Normally the correct setting for the idle screw is ½ to 1 turn open

258S . . . 1934—Adjustments are the same as described for model 267S Normally the correct setting for the idle screw is ⅜ to 1 turn open

266S . . . 1934—Adjustments are the same as described for model 267S Normally the correct setting for the idle screw is ⅝ to 1⅛ turns open

281S . . . 1934—If the carburetor loads up after considerable service, the float level should be checked Wear on the lip of the float lever will raise the float level Bending the lip of the float lever down raises the float level and bending the lever up, lowers the float level Only a very slight bend is needed To check the level, remove the bowl cover assembly turn it upside down and remove the cork gasket The distance from the surface of the cover to the top of the float should be ⅜".

If the engine stalls while idling, reset the idling adjustment It should be from ⅜ to 1 turn open Turning the idle screw out, clockwise, leans the mixture If these adjustments do not correct the trouble, remove the low speed jet and clean it thoroughly with compressed air See that the tube seats air tight in the body casting, top and bottom If not, replace it with a new tube of identical specifications

Increased resistance of the foot throttle indicates a clogged pump jet The pump jet should be removed and cleaned with compressed air, which in many cases will remove the dirt It is usually advisable, however, to replace the jet All jets and ball checks must seat gasoline tight

Poor acceleration may be due to damaged or worn plunger leather in the accelerating pump, corrosion in the pump cylinder, loose or cracked cylinder, cracked plunger cup or bent pump arm If the plunger is removed from the cylinder, the loading tool should be used in reassembling, to avoid damaging the leather

The pump stroke is adjustable and should give its shortest stroke in warm weather The pump cover must be removed to adjust the pump stroke When the cover is removed, the countershaft that operates the accelerating pump should be lubricated with graphite grease To lubricate this shaft, fill the cover screw hole with graphite grease

282S . . . 1934—Servicing is the same as described for Carter 281S except that the float level is $1^{3}/_{32}$"

283S . . . 1934—Servicing is the same as described for Carter 281S except that the normal idle screw setting is ½ to 1 turn open

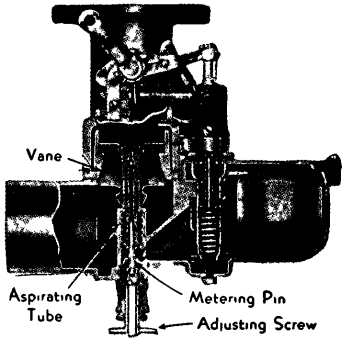
284S, 285S . . . 1934—Servicing is the same as described for Carter 281S except that the normal idle screw setting is ½ to 1½ turns open

288S . . . 1934—Servicing is the same as described for Carter 281S except that the normal idle setting is ½ to 1⅛ turns open

DETROIT

1931—There is only one mixture adjusting screw and it regulates the mixture throughout the entire engine range Turning the metering pin in, clockwise, makes the mixture leaner When the idle is properly set the carburetor is set for maximum performance of the engine

To eliminate the necessity of moving the throttle when starting, there is a kicker screw on the throttle which rides against a flat spot in the carburetor pump housing As the carburetor starting control lever is moved, the flat spot gives a cam action and opens the throttle The space between the end of the kicker screw and the flat spot on the pump housing should be 020" to 025 " with the throttle closed and the choke in normal running position



Cadillac V12, V16 . . . 1932—There is only one mixture adjusting screw the same as on other carburetors of this make Turning the metering pin at the bottom of the carburetor in, clockwise, gives a leaner mixture The right and left carburetors are equalized in the same manner as on the 1931 cars which used Cadillac carburetors The same equalizing gauge can be used with the exception of the fitting for connecting it to the intake manifolds

1933—There is only one mixture adjustment screw but it regulates the mixture throughout the entire engine range Turning the metering pin clockwise moves the pin upward into the orifice and makes the mixture leaner The quantity of fuel flowing is controlled by this tapered metering pin At idle speed the vanes are almost closed and the metering pin almost fills the air valve piston As the vanes rise, to admit more air, the air valve piston also rises and the metering pin orifice becomes larger due to the taper on the metering pin This combination maintains the correct ratio of fuel and air for average running

Cadillac V12, V16 . . . 1933—The right and left carburetors should be equalized to secure a smooth running engine

Use an equalizing gauge consisting of a U tube with mercury in it The ends of the gauge are connected to the intake manifolds after both brake assister and vacuum lines are disconnected The throttle rod must also be disconnected from

the right carburetor. Idle speed should be about 320 r.p.m. When the metering pins and throttle stop screws are properly adjusted, both columns of mercury in the gauge should be the same height and the engine should run smoothly at 320 r.p.m. If the columns of mercury are not the same length and the engine speed is too fast, reduce the speed by backing off the throttle stop screw on the side on which the mercury column is lower. If the speed is too slow, turn the throttle stop screw in a little on the side on which the mercury column is higher. If the mercury columns are the same level and the engine speed is too fast, adjust both throttle stop screws, turning each exactly the same amount to keep both columns at the same level. Adjust the right hand control rod to exactly the right length so that the clevis pin can be slipped into place without changing the engine speed.

If a gauge is not available the carburetors can be equalized by disconnecting the high tension coil wire from the distributor block firing one bank of cylinders and adjusting the carburetor for the other bank. Then disconnect the wire for the other bank of cylinders and adjust the other carburetor.

X8244 . . . 1934—There is only one adjustment, the metering pin which is raised or lowered by screwing it into or out of the fuel orifice. Turning the pin upward, clockwise, makes the mixture leaner. The engine should be thoroughly warmed and the connection to the automatic choke blocked in the off position, all the way down, before an adjustment is made. The proper mixture can be obtained by turning the metering pin all the way in and then backing it out 2¾ turns. When the metering pin is correctly adjusted at idling speed, the carburetor is set for maximum engine performance at all speeds and loads.

The idling adjustment can be made by turning the throttle stop screw until a .006" feeler gauge will go between the throttle butterfly valve and the carburetor body with the valve in the closed position.

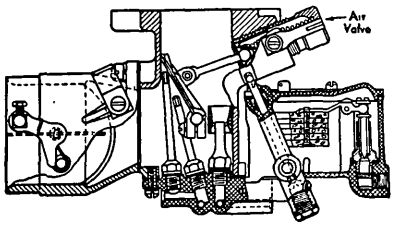
The kicker adjustment is made by setting the choke lever in the open position and turning the kicker screw until a .017" feeler gauge will just go between the throttle butterfly and the carburetor body with the throttle in the closed position.

The float level is correct when the fuel level in the bowl is 1 3/16" to 1 5/16" below the top of the float bowl casting.

51 . . . 1934—Service operations are the same as described for Detroit X8244 but the settings are different. The metering pin should be backed out 4 complete turns. A .004" feeler gauge is used when checking the idling adjustment and a .013" feeler gauge is used in making the kicker adjustment.

MARVEL

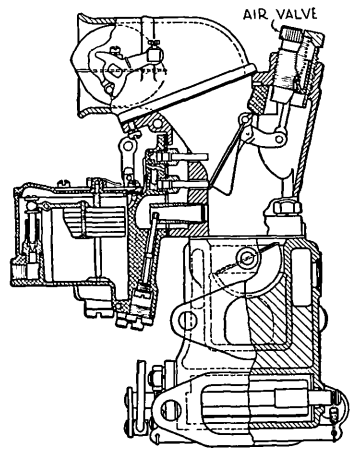
TD Dual . . . 1931—The instructions for the model T3 apply to this type. Although



there is an air valve in each barrel, a single air valve screw controls both simultaneously.

T3, VE3, VH4 With Heat Control . . . 1931—The instructions for the model AA3S apply to this type. In addition, the control lever on the dash must be set at "On" when an adjustment is being made.

AA3S . . . 1931—All jets have fixed openings and are not adjustable. Adjustment of the air valve screw is the only mixture adjustment. Set the air valve screw so that its head is flush with the end of the ratchet spring bearing against it. Turn the screw in, clockwise, to make the mixture richer. When the idle is set the entire carburetor is set for the complete range of engine speeds and loads. Refer to Model TD illustration.



DN, DO Down-Draft . . . 1931—The instructions for the model T3 apply to this type. It has only one set of jets and one air valve but there is a wall in the center of the throttle body so that each section can feed a separate manifold to four cylinders.

ED1S, ED2S, ED3 . . . 1933—All jets have fixed openings and are not adjustable. The main body has twin mixing chambers and in each chamber is an automatic air valve and three nozzles. The low speed nozzle is located in the venturi and the other two, high speed and intermediate high speed, are located under the automatic air valve. The air screw regulates the pressure of the air valve spring which controls the action of both air valves simultaneously in the two mixing chambers. This is the only mixture adjustment.

To adjust the air valve screw, turn it so that its head is flush with the end of the ratchet spring bearing against it.

Turn the screw in, clockwise, to make the mixture richer.

VE3, VH4 . . . 1933—There is only one mixing chamber, otherwise the operation and adjustments are the same as described for the ED models. The final setting should be within ½ turn of the flush point.

AC . . . 1933—The operation and adjustments are the same as described for model VE3 except that there is no ratchet spring bearing against the air valve screw.

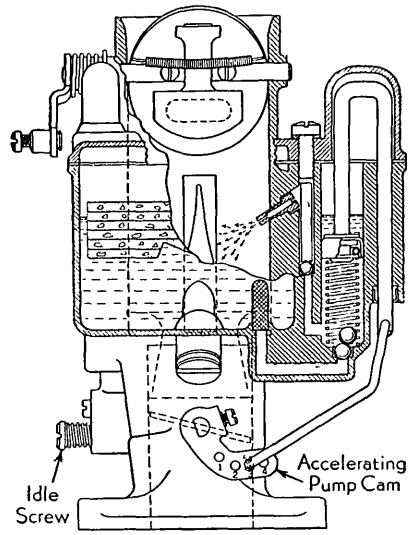
B . . . 1933—This is a down-draft, plain tube type. There is an idle adjustment and an adjustment to regulate the charge delivered by the accelerating pump. Turning the idle adjusting screw in, clockwise, leans the mixture.

Changing the hole through which the pump link is connected regulates the charge delivered by the pump. In normal temperatures the link should be in the middle hole, No. 2. For extremely warm weather it should be changed to hole No. 1 and for extremely cold weather it should be in No. 3 hole.

ED1S, ED2S, ED3 . . . 1934—To make an adjustment, turn the air screw so that its end is flush with the end of the ratchet spring bearing against it. Run the engine until it is warm. Turn the air valve screw out, clockwise, until the engine hesitates from too lean a mixture. Now turn the air screw in three or four notches at a time until the engine runs smoothly.

Next open the throttle a small amount and immediately allow it to snap back to its closed position to see if the engine will continue to idle smoothly. If it stalls, the air screw should be turned slightly to the right. If the engine rolls, the air screw should be turned slightly to the left. When this setting is correct, the carburetor is in complete adjustment for the entire range of engine speeds and loads.

To check the float level, remove the carburetor bowl cover assembly and turn it upside down. The distance from the surface of the bowl cover to the top of the cork float should be 17/32". The over-all length of the air valve spring should be 1½". If the length is not correct, the spring should be replaced, never altered.

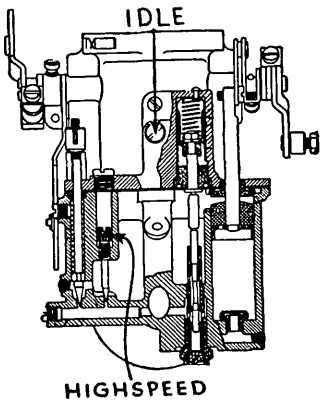


B . . . 1934—There is only an idle adjustment. Turning the idle screw in, clockwise, leans the mixture. To make an adjustment, run the engine until it is warm and set the throttle stop screw so that the engine idles at a speed equal to about 5 to 7 miles per hour. Turn the idle screw out slowly to the richest mixture that will not cause the engine to roll or run unevenly. This adjustment will, in most cases, give a slower idle speed than a slightly leaner adjustment with the same throttle stop screw setting, but will give the smoothest road operation.

The accelerating pump makes its shortest stroke and delivers its smallest charge when the rod is in hole No. 1. When the rod is in hole No. 4 the stroke is longest. In moderate climates the rod should be in hole No. 2 for summer driving and in hole No. 3 for winter driving. In extremely hot weather or when high test fuels are used, No. 1 setting is preferable.

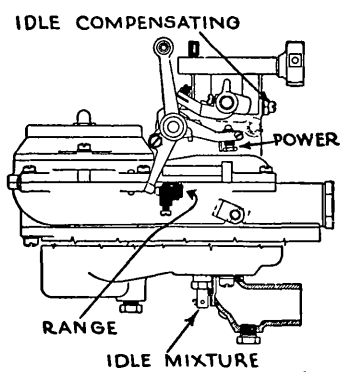
In extremely cold weather when a low grade of fuel is used, the setting should be in No. 4 hole.

To check the float level, remove the bowl cover and turn it upside down. The distance from the surface of the bowl cover to the top of the float should be 1⅜". With the engine idling, the fuel level should be 1 3/16" below the top of the bowl. The bottom of a screw hole in the bowl is at this level so that the fuel level can be checked by removing the plug screw.



SCHEBLER

T... 1931—There are two points of adjustment, one for idling and the other for high speeds. The idling mixture is made leaner by turning the screw out, counterclockwise. The high speed adjustment is inside the carburetor and covered by a plug which must be removed before the screw can be turned. Turning the screw in, clockwise, gives a leaner mixture. A number such as 5, 7, or 10 is stamped on the end of the carburetor flange following the type designation which indicates the original factory setting of the high speed jet, that is, the number of clicks off its seat that the jet was set.

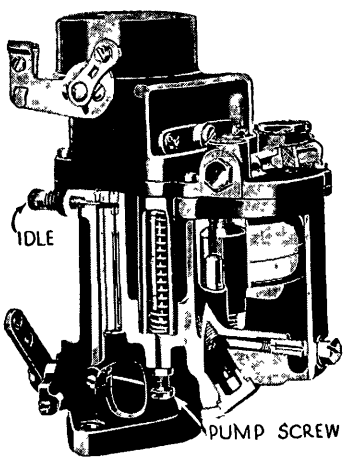


S Duplex... 1931—There are four idling adjustments, two for each barrel; a driving range adjustment; and a power adjustment. The adjustment of the idling screws in the bottom of the carburetor is limited to less than one revolution. These screws equalize the volume of the idling mixture. Turning them up, clockwise, leans the mixture. Turning the idling equalizer screws on the upper part of the barrel in, clockwise, slows down the idle speed. The upper and lower screws nearest the engine, control one barrel and the outer two control the other.

To adjust the carburetor, ground spark plug wires from cylinders 2, 7, and 8 and set number 1 so that the spark jumps about ⅛" to the ground. Turn the bottom screw controlling cylinders 3, 4, 5, and 6 in until the engine falters and then back it out about a quarter turn so that the cylinders fire evenly. There should be 60 sparks grounding from No. 1 wire every 30 seconds. Adjust this by turning the top equalizing screw for the same barrel. Replace wires 1, 2, 7, and 8 and remove the other four. Adjust the other four cylinders in the same manner by using the other two adjusting screws. The sparks must be counted accurately, for a difference of more than two sparks every 30 seconds will make an uneven idle speed when all cylinders are firing.

The range adjustment screw should be set with the head of the screw flush with the edge of the knurled bushing surrounding the screw. Turning the screw counterclockwise leans the mixture in the driving range, from 20 to 40 miles per hour.

The power screw is set with its head flush with the end of the pin beside it. This should not be changed except when driving at high altitudes when the screw can be turned counterclockwise 3 to 5 turns to lean the mixture.



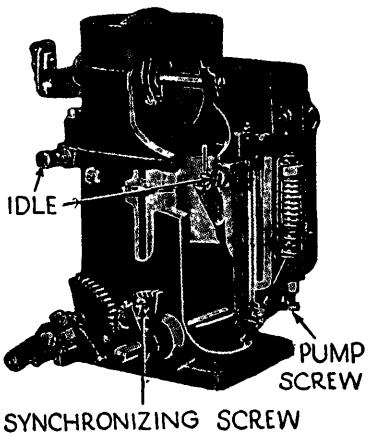
STROMBERG

D—The idle mixture adjusting screw is turned in, clockwise, to give a richer mixture. If a satisfactory idle is not obtained, check the openings listed for the model DD.

There is no adjustment of the intermediate and high speed jet. If it is not satisfactory due to atmospheric conditions or the grade of fuel used it is necessary to install a new jet.

The charge delivered by the accelerating pump is adjustable and should be changed for summer and winter driving. In the summer, when a smaller charge is required, turn the screw in, clockwise. A greater charge for winter driving can be obtained by turning the screw out, counterclockwise. Tighten the lock nut after making an adjustment.

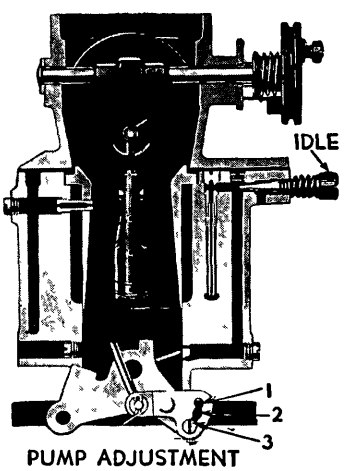
DD—Disconnect spark plug wires 1, 2, 7, and 8 and adjust the idle mixture screw that feeds the other four cylinders until they run evenly. Turning the idle mixture adjusting screw in, clockwise, gives a richer mixture. Replace these wires and disconnect wires 3, 4, 5, and 6. Adjust the other idle mixture screw until its four cylinders run evenly. With all wires in place the engine should run smoothly. The throttles must be synchronized so that they will open together and pass the same amount of air while the engine is idling. If adjusting the throttle screw does not prevent the engine from being erratic, adjust the synchronizing screw. Turning this screw clockwise opens the throttle in the left barrel and turning it counterclockwise closes it, without disturbing the position of the throttle



valve in the other barrel. If after everything has been checked, it is still impossible to get a satisfactory idle, remove the plug and see that the two holes near the lip of the throttle valve are open and clean. Also remove idle tube and see that the small hole in the end of it is open and that air can be blown through the tube in the hole. Check to see that the end of the idle tube does not strike the bottom of the hole.

There is no adjustment for the intermediate and high speed jet. If it is not satisfactory due to atmospheric conditions or the grade of fuel used, it is necessary to change the metering jet.

The charge of fuel delivered by the accelerating pump can be adjusted for hot and cold weather. When a larger charge is needed in cold weather, turn the screw down, counterclockwise. In summer when a smaller charge is needed, turn the screw clockwise.



DXR—Instructions for the model D idle and high speed adjustments apply to this model.

The charge delivered by the accelerating pump is adjusted by removing the pump adjusting screw and moving it to holes 1, 2, and 3 in the shifting lever according to the amount of pump action desired. When the screw is in hole No. 1 the pump delivers its smallest charge. No. 1 is best for high temperatures or very high test fuel. No. 2 is best for average temperature. No. 3 delivers the largest charge and is for very cold weather.

DDR3—Turning the idle mixture adjustment screws in, clockwise, makes the mixture richer. There are two idle adjusting screws, one for each bank of cylinders, the same as on model DD carburetors. Disconnect one bank of cylinders and

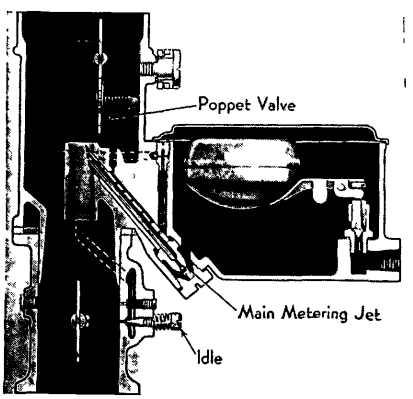
adjust the idle adjustment for the other bank. Perform the same operation on the other bank of cylinders. When both are connected and the engine runs unevenly, it is a sign that one bank is running faster than the other. A synchronizing adjustment is provided on the throttle shaft of the right hand bank. Mark the position of this screw with the slot and adjust the other side so that it is the same. The mixture for low speed is adjusted by turning the needle valve. Turning it in, clockwise, gives a richer mixture. Refer to model DD for illustration.

E2, E33—There is only one adjustment, the idle screw. Turning it in, clockwise, leans the mixture.

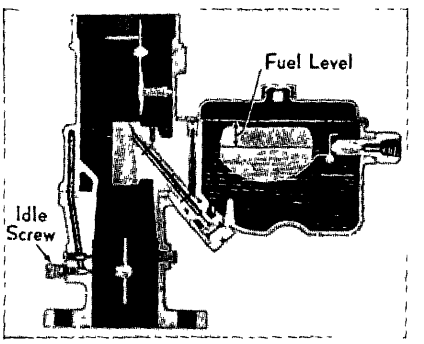
If a satisfactory adjustment cannot be obtained, remove the idle jet, main fuel supply jet, and the power jet as well as the check valve and clean all passages with compressed air. Dirt in these orifices restricts the flow of gasoline, resulting in a lean mixture. Check the idle screw seat to see that it is not scored.

The float level is correct when the fuel level in the bowl is ¾" below the top of the bowl flange, under the gasket. This can be measured by removing the bowl cover.

E2—There are two adjustments for the accelerating pump. In summer when a small charge is required the rod should be in the hole marked S and in the winter when a larger charge is required, the rod should be in the hole marked W. Refer to model EX for illustration.



EC—This is used on the 1932 Oldsmobile 6. Both the Oldsmobile 6 and 8 are equipped with an automatic choke consisting of a thermostat, spring, linkage, vacuum piston and safety release lever. An offset choke valve is necessary in the carburetor. The thermostat spring is used to close the choke valve when the engine temperature is below 70 degrees and gradually permits it to open as the engine warms up, until at 120 degrees and above, it is wide open. The linkage locks the choke valve in the closed position after the thermostat has closed it in order to hold the valve shut while cranking. The linkage is unlocked as soon as the engine fires and vacuum from the manifold allows the choke valve to open against the thermostat spring tension. Tension on this spring controls choke valve opening and closing and is adjusted by loosening the clamp screw on the spring shaft and turning the spring housing. Putting the arrow on the rich side tightens the thermostat while putting the arrow on the lean side weakens the tension. If the choke is not completely closed at 70 degrees, turn the housing so the arrow is on the rich side and continue until the choke valve is completely closed. The linkage should not be changed except in rare cases. There is also a positive accelerating device consisting of a pump which delivers an accelerating charge as soon as the throttle is opened and meters and delivers this charge over a definite period of time. A smaller charge is required in summer than in winter. The pump rod should be in the hole marked W in winter and in the hole marked S in summer. There is only one mixture adjustment, the idle adjustment. Turning the screw in, clockwise, gives a leaner mixture.



EE—The adjustments are the same as described for the model E except that it has double barrel and therefore two idle adjusting screws. Turning these screws in, clockwise, gives a leaner mixture. One screw should be adjusted at a time.

The fuel level is checked in the same manner and should be as follows: EE1 15/32", EE3 9/16", EE22-1¼" 5/8" EE22-1½" 11/32", EE23 5/8".

EX—There is an idle mixture adjustment and an adjustment to regulate the charge delivered by the accelerating pump. Turning the idle adjusting screw in, clockwise, makes the mixture leaner.

Changing the hole that the pump rod is in regulates the charge delivered by the pump. In summer when a small charge is required the rod should be in the hole marked S which gives a short stroke. In winter when a larger charge is required, the rod should be in the hole marked W which gives a longer stroke.

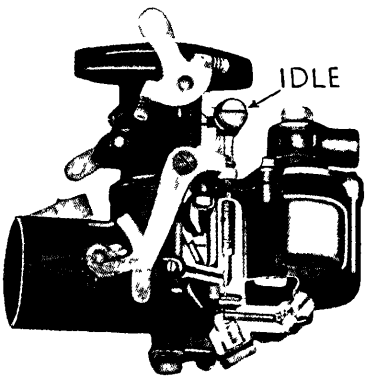
Two EX2 carburetors are used on the Auburn 12-160 and are connected by a synchronizing shaft with ball joints at either end to give universal action and to take care of possible variation due to heat or misalignment. The throttle valve opening in each carburetor must be exactly the same. See top of page 20.

The throttle stem of the left carburetor is pinned to the throttle lever and is operated by the accelerator rod, which in turn operates the throttle on the right carburetor by means of the synchronizing shaft. The throttle stem of the right carburetor can be synchronized to the left by means of a spring and adjusting screw on each end of the shaft.

With the engine at normal operating temperature, turn in the stop screw on the left carburetor for fast idle. Cut out the right bank of cylinders and unlock the adjusting screw at the right carburetor. Turn out the stop screw in the right carburetor and the adjusting screw on the shaft so that the throttle valve in the right carburetor will close completely. Turning the idle adjusting screw in, clockwise, gives a leaner mixture. Adjust this screw until the engine runs smoothly. Unlock the adjusting screw on the left carburetor, turning it out enough so that there is sufficient compression on the spring at the right carburetor to keep the throttle in the right carburetor closed. Lock the adjusting screw at the left carburetor and connect the right bank of cylinders. Turn in the stop screw in the right carburetor for fast idle and cut out the left bank of cylinders. Adjust the stop screw for the desired speed and adjust the idle screw in the right carburetor. Then turn the adjusting screw at the right carburetor so it just touches the throttle lever. Note the speed of the right bank of cylinders. Connect the left bank of cylinders and disconnect the right bank and note the speed of the left cylinders. If the speeds are not the same they can now be adjusted by the stop screw in the carburetors, making sure that the adjusting screw at the right carburetor touches the throttle lever at all times. After both banks of cylinders are running at the same speed, lock the adjusting screw at the right carburetor and the synchronization is complete.

EX22, EX32—The adjustments are the same as described for the Stromberg E2 carburetor.

The fuel level is 5/8" below the bowl flange on all models except Graham Custom 8. On this car it is 9/16".



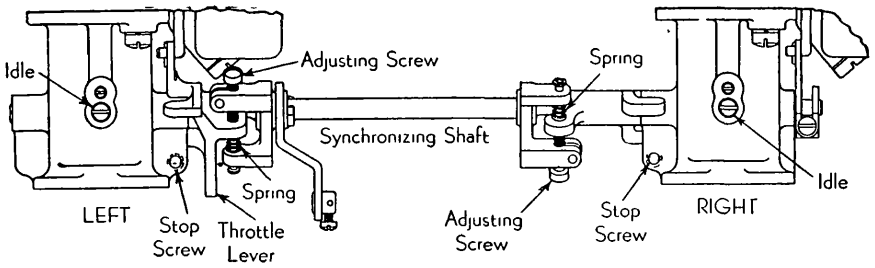
U—The idle mixture adjustment screw is turned in, clockwise, to give a richer mixture. If this does not give a satisfactory idle, remove the horizontal plug near idle adjustment and see that the two holes near the lip of the throttle valve are open and clean. Also remove idle tube and see that the small holes in the ends are open and that air can be blown through the tube.

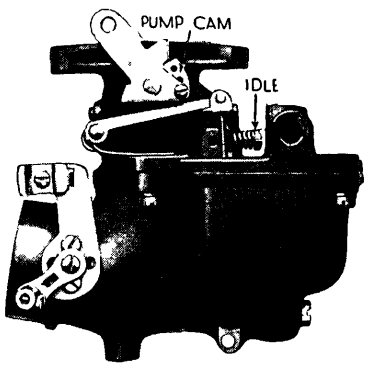
There is no adjustment for the main metering jet. If it is not satisfactory due to atmospheric conditions or the grade of fuel used, it is necessary to install another jet.

UR—Instructions for the model U idle and high speed adjustments apply to this model.

The charge delivered by the accelerating pump can be changed by moving the screw that connects the throttle and the pump cam. When the screw is in the lowest hole as shown in the illustration the charge is smallest, summer adjustment. Moving the screw to the upper hole gives the largest charge, winter adjustment.

UR02, 23—There is only one adjustment, the idle screw. Turning it out, counterclockwise, leans the mixture. After the

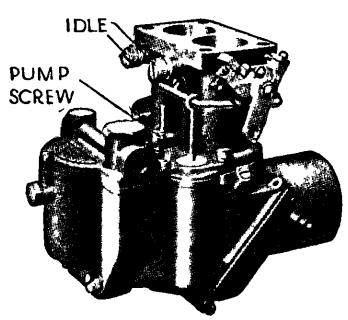




engine is warm and idling at a speed equal to about 7 to 8 miles per hour the idle screw should be turned out until the engine begins to miss from too lean a mixture. Then turn the screw in until the engine fires evenly on all cylinders.

The accelerating pump cam has three holes. The lower one delivers the greatest charge of gasoline and should be used in cold weather. The center hole is for average temperatures and the upper hole delivers the smallest charge and should be used for extremely high temperatures.

The float level is checked in the same manner described for Stromberg E2 carburetors. The fuel level should be 9/16" below the bowl flange.



UU—There is an idle mixture adjusting screw for each barrel. Turning the screws in, clockwise, leans the mixture. Turn the adjusting screw in one barrel all the way in until it seats; this will cut off the fuel supply to four cylinders. Adjust the other screw until the engine is running as slowly and smoothly as possible on four cylinders. Now turn the other screw out, counterclockwise, until all eight cylinders are firing smoothly. This can also be adjusted by disconnecting spark plug wires 1, 2, 7, and 8 and adjusting one screw until the engine is running as slowly and smoothly as possible on four cylinders and then doing the same with the other cylinders and the other adjusting screw.

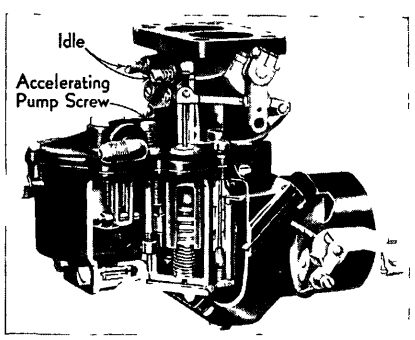
There is no adjustment for the main metering jet.

The accelerating pump has an adjustment for summer and winter driving. Turning the screw clockwise decreases the charge for summer driving. The adjustment should be ¼ to ½ turn open for average conditions.

UUR—Refer to model UU illustration.

Instructions for the model UU idle and high speed adjustment apply to this model.

The charge delivered by the accelerating pump can be decreased by turning the adjusting screw in, clockwise. For normal conditions it should be from 1 to 1½ turns off its seat. To check the adjustment, retard the spark and open the throttle. Too small an opening may give a hesitation just as the throttle is opened, while too large an opening may give a "stumble" as the engine picks up. Another test can be made while running on the road. Too small an opening will give a hesitating or uncertain condition when the throttle is suddenly opened while going about five miles per hour with the car in high gear.



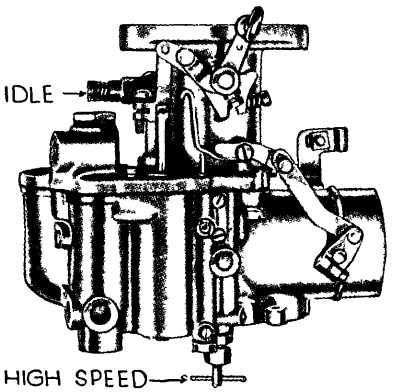
UUR2—There is only one adjustment, the idle screws. Turning them out, counterclockwise, leans the mixture. After the engine is idling at a speed equal to about 5 miles per hour, the idle screws should be turned out until the engine begins to miss from too lean a mixture. Then turn them in until the engine fires evenly on all cylinders. One screw should be adjusted at a time.

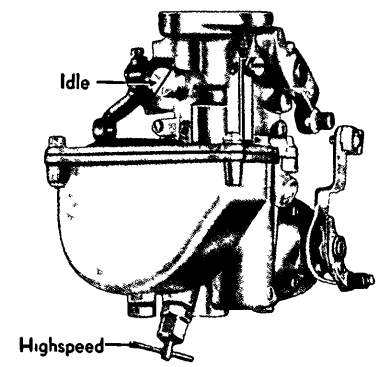
The charge delivered by the accelerating pump is adjusted by a screw. Turning the screw out, counterclockwise, increases the charge delivered by the pump. In cold weather the screw should be 2 to 2½ turns open and in warm weather it should be 1½ to 2 turns open. If the carburetor pops back or hesitates on rapid acceleration, turn the adjusting screw counterclockwise until a smooth pickup is obtained. If the engine is sluggish and slow to get away, turn the screw clockwise until the acceleration is normal.

The float level is checked the same as described for Stromberg E2 carburetors. The fuel level should be ¾" below the bowl flange.

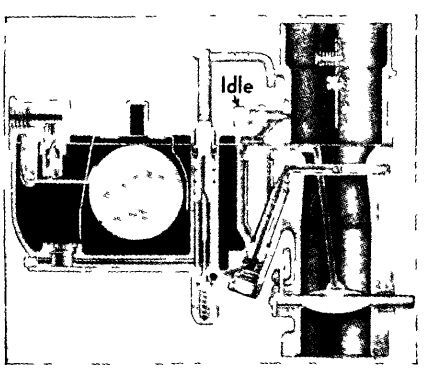
TILLOTSON

V5, W5, J1A—There are two points for adjusting the mixture, the main adjusting needle and the idle or low speed adjusting screw. Turning the idle adjusting screw in, clockwise, makes the mixture richer. Turning the main adjusting needle in, clockwise, leans the mixture for the driving range.





J3B—The adjustments are the same as for the model J1A, that is, there are two points for adjusting the mixture, the main adjusting needle and the idle or low speed adjustment. Turning the idle adjusting screw in, clockwise, makes the mixture richer. Turning the main adjusting needle in, clockwise, leans the mixture for the driving range.

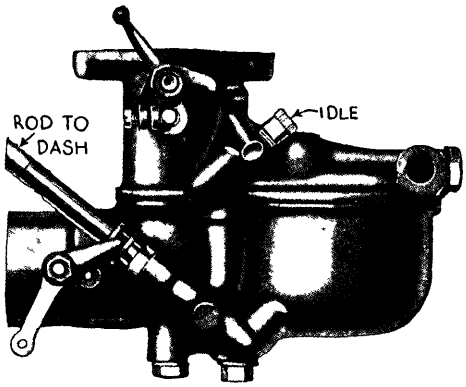


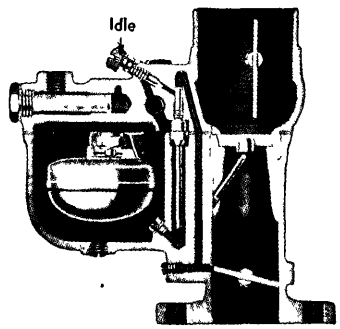
D1A—There is only an idle mixture adjustment. Turning the idle screw out counterclockwise, gives a leaner mixture.

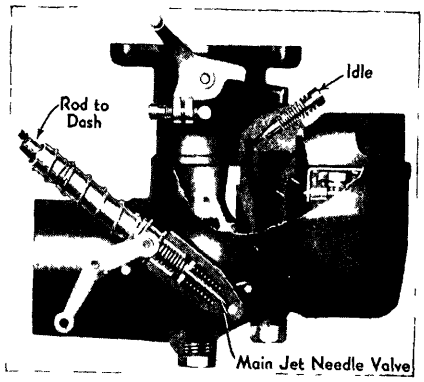
ZENITH

1931—The idle screw is turned in, clockwise to make the mixture richer. The screw should be from 1½ to 3½ turns off its seat for best results. The adjustment for driving is the button on the dash. This should be about ¼ turn off its seat when driving, after the engine is warm. Turning the screw in, clockwise, makes the mixture leaner.

IN155½...1932—There is only one mixture adjustment, the idle adjustment. When making an adjustment, a good starting position for this screw is 1½ turns open. Turning the idle screw in, clockwise, makes the mixture richer. The





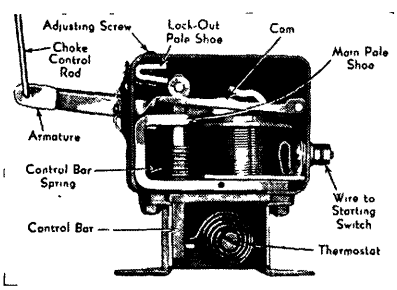


carburetor is equipped with an economizer and accelerating piston.

1931—The idle screw is turned in, clockwise, to make the mixture richer. Normally the screw should be from 1¼ to 1¾ turns off its seat for best results. The main jet needle valve is controlled from the dash and the car should never be operated with this adjustment open. Turning the button on the dash counterclockwise gives a richer mixture.

AUTOMATIC CHOKES

IN ADDITION to making carburetor adjustments on some cars, it may also be necessary to adjust the automatic choke, especially if the carburetor or automatic choke unit has been removed from the car.



SISSON

Chrysler, DeSoto, Dodge... 1934—The Sisson automatic choke is operated by an electro magnet and a thermostat. If the engine is cold, the carburetor gets a full choke until the engine starts, the choke is then opened partially and continues to open as the engine warms up. If the engine is slightly warm, the carburetor gets a partial choke and if the engine is hot, the choke does not operate.

The electro magnet is connected to the starting switch and operates only when the engine is being cranked by the starting motor. The thermostat receives its heat from the exhaust manifold. The amount of choke given to the carburetor depends upon the position of the armature in the automatic choke. The control bar spring tends to raise the armature, opening the choke, while the electro magnet and thermostat overcome this tension to pull the armature downward, closing the choke. When cold, the thermostat pulls down on the control bar and armature but as the thermostat is heated it expands, letting the control bar spring raise the control bar and armature, opening the choke.

When the engine is cold, for example around zero, the armature will be down almost in contact with the pole shoe and the choke will be almost closed, due to the action of the thermostat. When the operator steps on the starting switch, the electro magnet pulls the armature down, closing the choke entirely. When the engine starts and the starting switch contact is broken, the electro magnet releases the armature, allowing it to move up and the choke to open slightly. As the engine continues to run the thermostat is heated, permitting the control bar spring to raise the armature, opening the choke.

The thermostat through inter-connecting linkage and cam mechanism controls the extent to which the electro magnet can close the choke at temperatures of 70 degrees and above at the thermostat, regardless of atmospheric temperatures. The cam is in the form of a goose neck, the bottom of which is pivoted to the control bar. As the temperature rises the thermostat allows the control bar to move upward and the cam is moved in between the top of the electro magnet and the finger on the armature. When the cam is moved in between these two parts the electro magnet can pull the armature down to a less extent.

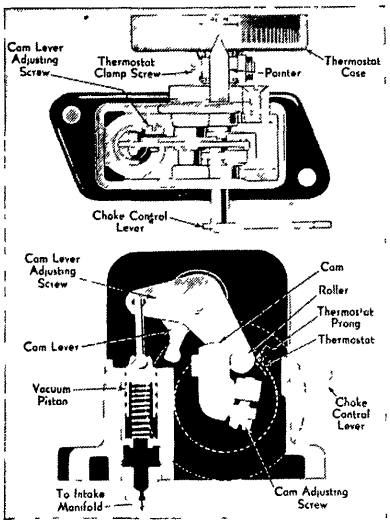
The lock-out pole shoe prevents the electro magnet from pulling the armature down after the engine is thoroughly warmed up. It is a soft iron shoe which is connected in the magnetic circuit through the case which houses the choke. Normally the main magnetic pole shoe exerts the pull on the armature and the lock-out pole shoe does not come into play. However, when the armature is in its top position and in contact with the lock-out pole shoe, the force of this pole shoe is greater than the main pole shoe and the armature stays up.

The automatic choke is properly set when assembled to the carburetor and will require no attention other than to keep all connections properly secured. If the automatic choke or the carburetor is removed from the engine the following instructions should be followed. Remove the cover from the side of the choke. Place the choke control rod in the armature and in the choke valve shaft lever on the carburetor, leaving the choke valve shaft lever loose on its shaft. Hold the armature down to its lower position, allowing .015" clearance between the armature and the main pole shoe. With the armature in this position, close the carburetor choke valve absolutely tight and tighten the choke valve lever to its shaft. Now raise the control bar until the armature is in its extreme upper position. Hold the control bar in this position and turn the adjusting screw to give a clearance of .015" between the stop lever and the choke valve lever stop screw on the carburetor. Under no conditions should the automatic choke be disassembled or oiled.

STROMBERG

Oldsmobile, Packard, Pierce-Arrow, Reo, Studebaker... 1933—The Stromberg automatic choke control, model C, is wholly governed by the vacuum and heat of the engine, allowing the carburetor choke valve to automatically open the correct amount during the warming up period of the engine. The thermostat in the choke control returns the carburetor choke valve to closed position when the thermostat reaches a temperature of 70 degrees. The choke valve is closed during the cranking of the engine and held in that position by the locking of the roller against the cam. When the engine fires and a manifold vacuum is created, the vacuum piston is pulled partly down, unlocking the cam and roller. As soon as the engine fires steadily and an even vacuum is present, the piston travels down the remaining distance. The cam lever then comes in contact with the cam, opening the choke a predetermined distance against the tension of the thermostat spring. As the engine warms up, the thermostat continues to move the lever, opening the choke and when the engine has reached a temperature of 120 degrees, the choke valve is in wide open position.

To adjust the automatic choke, remove it from the engine by disassembling the carburetor choke rod. The thermostat should have a temperature of 70 degrees. If the car has been running, it is necessary to allow the automatic choke to stand long enough to cool off or if the shop is colder than 70 degrees, the choke should be taken into a room of normal temperature. Remove the housing cover and see that all working parts operate freely.



With the roller in locked position against the first notch of the cam, the distance between the center line of the hole in the choke control lever and the bottom of the choke housing should be as shown in the table below. This is adjusted after loosening the cam adjusting screw. The distance between the cam and the cam lever is set to the thickness of the number drill shown below with the cam in its locked position. It can be adjusted after loosening the cam lever adjusting screw.

Automatic Choke Setting

Car make	Choke control lever	Cam	Thermostat
Oldsmobile 6, 8....	11⁹⁄₃₂	20	14
Packard 8, Super 8	11⁵⁄₃₂	17	8
Packard 12	11⁵⁄₁₆	10	28
Studebaker 6	1⁵⁄₁₆	17	16
Studebaker 8, all...	1¹⁄₁₆	17	16

Unhook the thermostat from its prong. Loosen the thermostat clamp screw and revolve the thermostat case so that the zero marking is under the pointer. When in this position, the hook of the thermostat should be flush with its prong. Hook the thermostat onto its prong and revolve the case the correct number of notches rich. Tighten the thermostat clamp screw. Assemble the connecting rod between the choke control and the carburetor so that there is only .006 inch backlash between the levers.

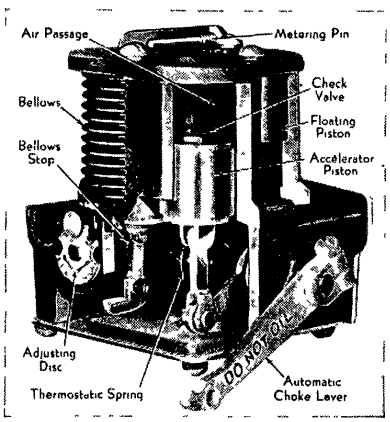
DELCO-REMY

Buick... 1934—The Delco-Remy automatic choke is attached to the carburetor riser and is controlled by variations in carburetor riser temperatures, manifold vacuum and carburetor inlet velocities. A thermostatic spiral spring in the automatic choke has one end secured to a shaft which controls the position of the carburetor choker fly through the automatic choke lever and connecting rod. The other end of the spring is connected to a spring loaded bellows.

The spring winds up as temperatures decrease, holding the automatic choke lever down and the carburetor choker fly closed. When starting a cold engine, the choker fly is held closed until initial firing of the engine. As soon as the engine fires, the high vacuum in the manifold collapses the bellows, rotating the thermostatic spring to relieve tension on the choker fly, leaning the mixture. The amount of decrease in tension is regulated by the stroke of the bellows. The stroke is controlled by an adjustable cam-shaped stop which gives the correct tension for the proper choker fly position under all part throttle engine loads and speeds. The thermostatic spring tension decreases as the engine warms up until the automatic choke is completely out of operation.

The time required for the choker fly to travel from the closed position to part throttle is controlled by a metering pin which regulates the vacuum action of the bellows.

Upon acceleration, the quick opening of the throttle causes the vacuum in the manifold to suddenly diminish. Because



the carburetor cannot entirely correct for any sudden change in manifold vacuum or air velocities due to over-acceleration during the warm-up period, an independent, automatic mechanical correction is necessary to get solid acceleration. With the drop in vacuum, the spring under the floating piston forces it to the top and transfers the air to the top of the accelerating piston, forcing it downward to give a partial choke for a short interval. The amount of correction necessary gradually decreases as the engine approaches stabilized temperatures and the accelerating action of the automatic choke is decreased accordingly. After the engine is warm, the action of the accelerating piston is negligible.

The units are calibrated at the factory and should require no adjustments. However, if trouble arises, the following procedure is recommended.

Remove the connecting rod from the automatic choke lever. Hold the automatic choke lever and the choker fly lever down as far as possible and adjust the length of the connecting rod so that it will just fit into the notch on top of the automatic choke lever. Then install the connecting rod in the automatic choke lever. If the connecting rod is too long the starting mixture will be too rich. If the connecting rod is too short, the starting mixture will be too lean.

Check the choker fly action by moving the automatic choke lever up and down. The moving parts must work freely and the lever must always return to its original position. Make sure that all moving parts are dry and free from oil of any kind. Never oil any part of the choker mechanism.

A lean mixture on acceleration or the absence of the momentary opening of the choker fly on starting may be caused by a leaking check valve in the top of the accelerating piston. If the control lever does not return to the closed position immediately after the opening it indicates that the check valve is not opening.

If the engine fails to start after several trials, with the choker fly in full choke position, the engine is probably flooded. If flooded, open the choker fly by pulling up on the automatic choke lever. The engine can probably then be started and run sufficiently to eliminate the flooded condition. Stop the engine and permit it to cool down until the choker fly is again in full choke position. Start the engine again and notice whether or not the choke lever travels slowly up to its part throttle position. If not, the vacuum is failing to release the choke. Check for vacuum leaks, plugged vacuum channels or incorrect metering pin timing.

The bellows are properly timed at the factory and before making an adjustment, make certain that all vacuum leaks and channel obstructions are eliminated. If timing is necessary, allow the engine to cool until the choker fly returns to its closed position. Start the engine and check the time required for the automatic choke lever to travel up to its part throttle position. It should take 15 to 20 seconds to complete this movement. The time required can be increased by turning the metering screw in, clockwise, and decreased by turning the metering screw out, counterclockwise.

The part throttle setting of the choke is indicated by an adjusting disc. This is set in the center notch, between rich and lean, to provide ⅜" travel of the bellows and should be changed only to compensate for extreme cases.

CARTER

Hudson, Terraplane... 1934—The Carter climatic control is designed to give the proper fuel mixture ratios at all temperatures and at all speeds, relieving the driver of this operation for the starting and driving of a cold engine.

It consists of two major assemblies, the control unit and the stove. The control mechanism is mounted on the carburetor in an insulated housing. The stove is mounted on the exhaust manifold and connected to the control unit by a flexible tube. The control unit piston lever is mounted on the choke valve shaft. The control unit holds the choke valve in its fully closed position when the engine temperature is below 75 degrees. When the engine is running, hot air from the exhaust manifold passes through the stove and the tube to the control unit where the thermostat gives the correct setting of the choke valve for all starting and operating conditions.

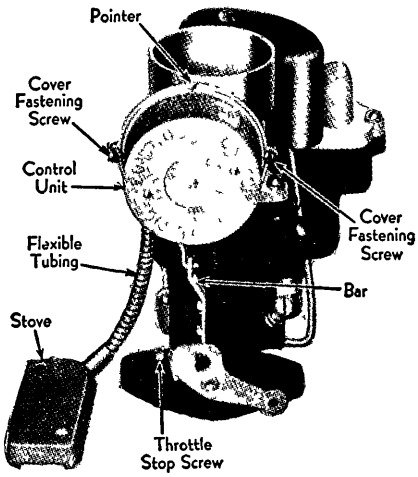
When the choke valve is closed, a bar is dropped behind the throttle stop screw to increase the idling speed during the warm-up period. This bar cannot drop into position until the throttle has been opened. Therefore in starting the engine, the accelerator pedal must be depressed once, but not more than once, to open the throttle to the proper point to insure easy starting with a cold engine. Then when the ignition is turned on and the starting switch is depressed, no other attention will be required. As the engine warms up the throttle opening will permit the engine to run at a car speed of 15 m.p.h. to prevent stalling.

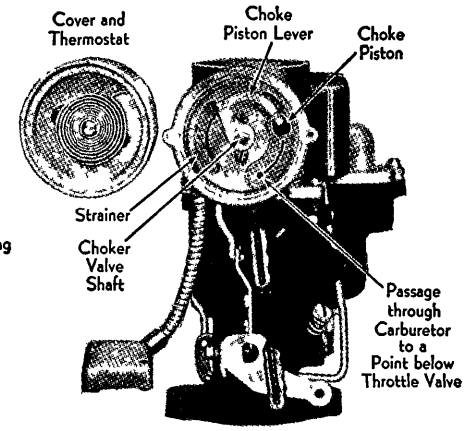
Another feature is the delayed action throttle valve. When the foot is removed from the accelerator, the engine does not slow down to idling speed instantaneously. This is especially desirable with the automatic clutch, to insure smooth operation.

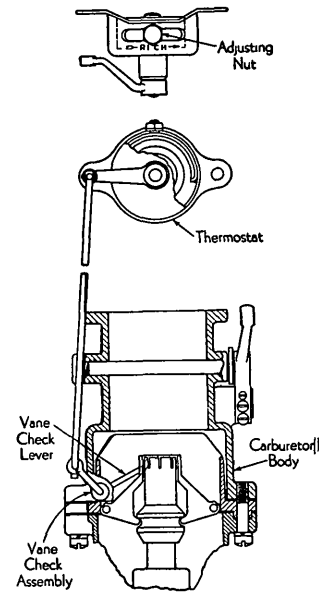
The position of the choker valve is controlled by existing temperatures and not by any adjustments. On a warm day the choker valve might be open slightly. On a cold day the choker valve is completely closed. The unit is adjusted at the factory to close the choker valve at 74 degrees. Do not, therefore, try to adjust the position of the choker valve.

The control housing carries an arrow

AUTOMATIC CHOKES...







which shows the direction it should be turned to lean the starting mixture. This is the only adjustment on the unit and it must always be made with the engine cold. It compensates for the type of gasoline used. Low grade fuels have a tendency to run rich during warm-up while high test fuels run lean. The best results for starting and warm-up are usually obtained with the pointer at the center mark. If a cold engine shows a tendency to run lean during the warm-up period with this setting, turn the control unit housing counterclockwise one mark at a time until the desired results are obtained. If the cold engine has a tendency to load up or run rich during the warm-up period, turn the housing clockwise one mark at a time until the desired results are obtained. The housing can be turned after loosening the two screws at its rim. The extreme range of adjustment is no more than the last graduation mark on the cover, in either direction. If moved beyond this point on the lean side, the engine will not start. If moved beyond the last mark on the rich side, the choker valve will not completely open. It is not advisable to make this adjustment until the car has been driven at least 1000 miles.

When it is necessary to remove the carburetor from the engine, loosen the lock screw that holds the tube in the control unit so that the tube may be slipped from the housing. When reassembling, make certain that the tube is in to the full depth of the hole in the housing. An air leak at this point will prevent the control from operating.

The thermostat and cover may be removed as a unit by removing the screws at the rim of the cover. Examine to make certain that the housing is free from dirt. Use air pressure only, to clean. Do not attempt to remove the thermostat from the cover or to alter its shape or position. When reassembling, place the graduation marks on the cover at the bottom and install the cover fastening screws. Do not tighten them. Now revolve the cover counterclockwise until spring tension is felt on the choker valve. Then set the center marking on the cover in line with the housing pointer.

DETROIT

Cadillac... 1934—The Detroit carburetors are of the expanding vane type and the automatic choke restricts the expanding of the vane until the engine is warm. A thermostat is mounted on the exhaust manifold and when the engine is cold it contracts and holds the vane control lever against the vane so that it cannot expand. As the engine warms up, the thermostat is heated and expands. This permits its lever to drop, raising the vane control lever in the carburetor until it is high enough so that it does not restrict the expanding of the vanes.

There is only one adjustment and ordinarily no adjustment is necessary. If it has been tampered with, however, it can be adjusted by loosening the adjusting nut on the thermostat and sliding the thermostat stop until a pull of 12.9 ounces on the V8 cars and 5.2 ounces on the V12 and V16 cars is required to hold the thermostat arm in a horizontal position. This should be done at a temperature of 70 degrees.

IGNITION TIMING...

FIVE types of breaker arm and cam arrangements are used in distributors.

1 The first and simplest is the breaker cam having as many lobes as there are cylinders in the engine and a single breaker arm. One ignition coil is used. With this type, when the points break correctly for one cylinder, all other cylinders are timed.

2 The second type uses a breaker cam having as many lobes as there are cylinders, but has two breaker arms operating in parallel. One ignition coil is used. Both sets of points open at the same time.

3 The third type has a breaker cam with half as many lobes as there are cylinders in the engine and uses two breaker arms. One breaker arm fires half the cylinders and the second breaker arm fires the others. One ignition coil is used. For a straight eight cylinder engine, one set of points opens 45 degrees of cam travel after the other. On some V type engines this interval is irregular. Adjusting both sets of points in their correct relation is called synchronizing. Gauges are made to synchronize the points and flywheel marks or piston travel can also be used. If the points are synchronized with a gauge while on the bench it is only necessary to time one set of points with the engine after the distributor is installed.

4 The fourth type of distributor has a breaker cam with half as many lobes as there are cylinders in the engine and two breaker arms with separate electrical circuits. The contact points must be synchronized the same as with the third type. Two ignition coils are used, one for each set of points.

5 The fifth type of distributor is the same as the fourth except that the breaker cam has as many lobes as there are cylinders and both sets of points must open at the same time, similar to type two. Each set of points is electrically separate. Two ignition coils are used. This type is used on dual ignition engines.

Many distributors have both automatic and manual spark advance while some have only the automatic advance. In addition to these two combinations, some cars have a vacuum spark control that is separate from the other two. Instead of depending upon the speed of the engine for its operation, it depends upon the vacuum in the intake manifold. This control consists of a flexible diaphragm connected to the distributor and the intake manifold to advance or retard the spark. A calibrated spring is built into the diaphragm case to act on the diaphragm against the intake manifold vacuum. The

tension on the spring cannot be adjusted If the unit does not function properly check the vacuum line and connections for leaks It is easy to observe whether the unit is functioning or not by opening and closing the throttle with the engine running and noting the movement of the advance arm

One type of control is installed so that it will retard the distributor when there is a high vacuum in the manifold This application is to give improved idling performance When the engine is idling there is a high vacuum in the manifold which acts on the diaphragm, compressing its spring and retarding the distributor. The vacuum line is connected on the engine side of the butterfly valve As the engine is speeded up, the vacuum decreases and the spring returns the diaphragm to its normal advanced position Further increase in engine speed brings the centrifugal automatic spark advance mechanism into operation in the regular way Due to the retarding of the spark at idling speed, this unit is adaptable to cars having free wheeling as it retards the spark when the throttle is closed and the free wheeling unit is in operation When connecting the unit to the distributor, move the distributor advance arm to the fully advanced position

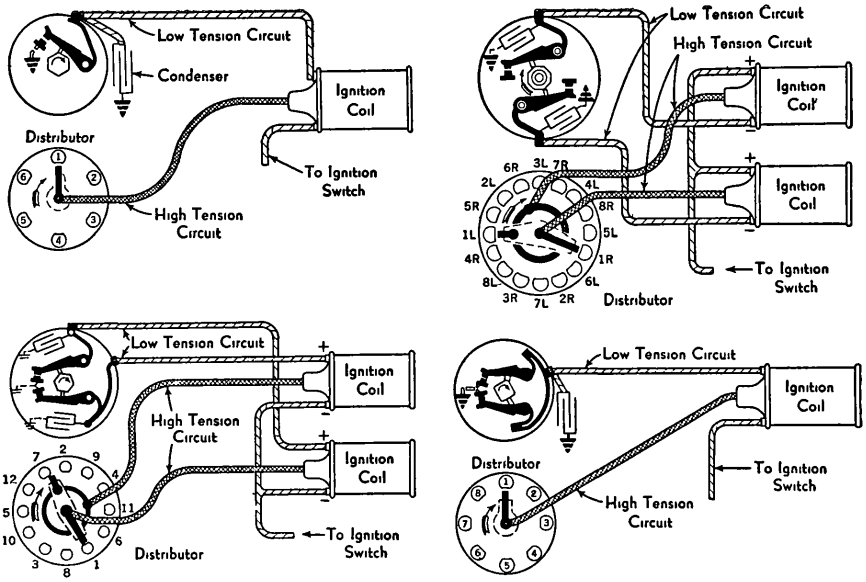
The vacuum spark control unit can also be attached to the distributor to retard the spark when the engine is on a hard pull or on quick acceleration As there is very little vacuum in the manifold under such conditions, no force is exerted on the diaphragm and the spring holds the diaphragm in its normal retarded position When the engine is idling or operating with part throttle, the vacuum in the manifold increases and the diaphragm advances the distributor When a combination of manual, centrifugal and vacuum spark control is used and the diaphragm unit is mounted on the manual advance arm, provision is usually made for holding the arm in correct position while the distributor is timed A method for holding the arm in the correct position for timing is to line up the holes that are drilled in each arm and insert a pin in them until the timing operations have been completed The diaphragm will be compressed under the above conditions

When timing the spark by watching the ammeter on a car equipped with an automatic starter, Startix, remove the small wire at the terminal of the automatic starter marked IGN and tape the loose end With this wire removed, the automatic starter will not operate and the timing can be checked with the ignition switch turned on

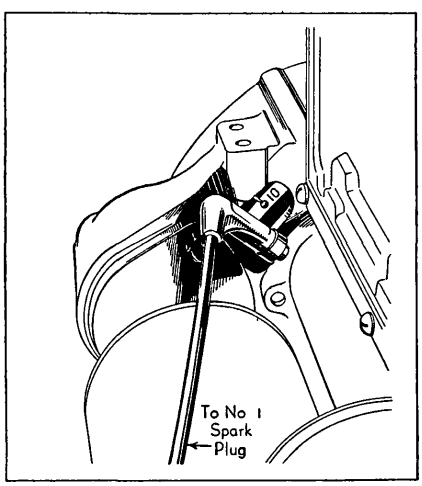
AUBURN

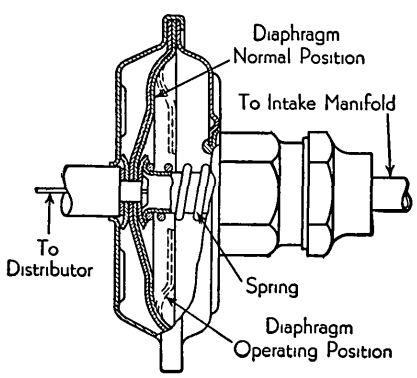
12-160 and 12-165 . . . 1932, 1933—A six lobe cam and two breakers, each working through an individual coil are used No 4 Each bank of cylinders may be treated as an independent six cylinder engine having a firing order of 153624 The breakers should be synchronized with a gauge before installing the distributor on the car The breaker arms will then be located in the distributor to give the proper timing for each bank The breaker arm which can be adjusted for synchronization must always fire the left bank while the stationary breaker fires the right bank Failure to do this will result in one bank being correct while the other will be either 30 degrees early or late

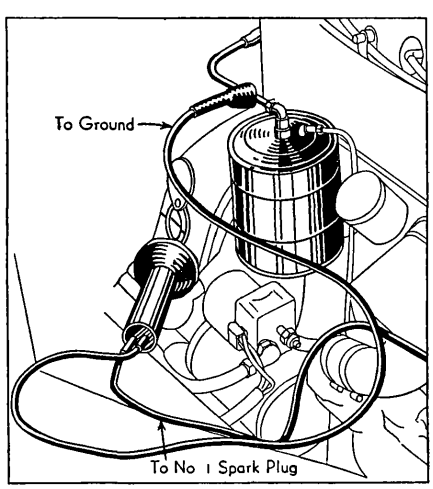
With the control lever in full advance position, crank the engine until No. 1 piston in the left bank is coming up on its compression stroke and the marks DC/1 & 6 on the flywheel are 3½ teeth ahead of

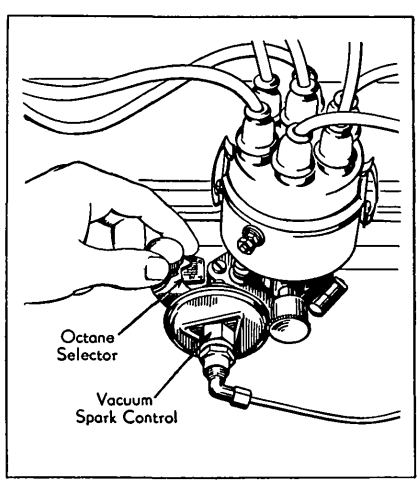


Wiring diagrams of the different ignition circuits Upper left—No 1, Single breaker and coil Upper right—No 5, Double breaker, as many lobes on the cam as there are cylinders and two ignition coils, for dual ignition Lower left—No 4, Double breaker, half as many lobes on the cam as there are cylinders and a coil for each set of breaker points Lower right—No 3 Double breaker half as many lobes on the cam as there are cylinders and but one ignition coil









Upper left—Neon timing light Lower left—Synchroscope timing light Upper right—Vacuum spark control unit Lower right—Octane selector.

the pointer at the peep hole. In this position the adjustable points should just break. The high tension cable from the coil connected to the adjustable breaker goes in the socket at the center of the distributor cap. The rotor point which takes its current from the center terminal should be under the terminal that leads to No. 1 cylinder on the left bank. With this as a starting point, the left bank can be wired as a six cylinder engine with a firing order 153624, using every second terminal in the distributor cap and going in a clockwise direction. Number 1 wire from the right bank is placed in the first vacant terminal in a clockwise direction from No. 1 left wire. The right bank is then wired with the same firing order as the left bank.

8 . . . 1930, 1932—Distributor point gap .020". Two breaker arms and a four-lobe cam are used, No. 3. With the spark lever in full advance position, crank the engine until No. 1 piston is coming up on its compression stroke and continue until the DC mark on the flywheel is two teeth before the line on the peep hole. Loosen the distributor clamp screw and turn the housing until the stationary set of points just opens. Turn the engine one quarter revolution until the DC mark on the flywheel is two teeth before the line on the peep hole. Loosen the adjustable breaker arm plate screws and turn the adjusting screw until the adjustable points just open.

8-101 and 8-105 . . . 1933, 1934—Same as preceding except No. 1 piston is cranked on its compression stroke until the TDC 1-8 mark is 3½ teeth before the peep hole, etc.

BUICK

40 . . . 1930—Distributor point gap .018". A single breaker arm is used, No. 1. With spark lever in full advance position, crank the engine until No. 6 exhaust valve starts to close and continue until the line marked ADV-15 on the flywheel is directly opposite the index line on the peep hole. Loosen the distributor clamp screw and turn the housing until the points just open.

50, 60 . . . 1930—Distributor point gap .018". Two breaker arms and a three-lobe cam are used, No. 3. With spark lever in full advance position, crank the engine until No. 6 exhaust valve starts to close and continue until the line marked ADV-17 on the flywheel is directly opposite the index line on the peep hole. Loosen the distributor clamp screw and turn the housing until the stationary set of points just opens. Then crank the engine one full turn until the marks again register. Loosen the adjustable breaker arm plate screws and turn the adjusting screw until the adjustable set of points just opens. To synchronize the points with a gauge when the distributor rotates clockwise, place the gauge on the shaft with the left side of the spring in the slot in the cam and turn the shaft clockwise until the forward leg of the gauge is over the slot in the rim of the housing. Continue to turn the shaft until the stationary set of points just opens and note the number that is directly over the approaching edge of the slot. Turn the shaft in the same direction until the same number on the rear leg aligns with the same edge. Loosen the adjustable breaker arm plate screws and turn the adjusting screw until the points just open. When the distributor rotates counter-clockwise, place the gauge on the shaft with the right side of the spring in the slot.

8-50 . . . 1931—No. 3. With the spark control button all the way in, crank the engine until No. 3 exhaust valve starts to open and continue until the line marked ADV 12 on the flywheel registers with the index line on the peep hole in the right side of the flywheel housing. At this point No. 1 piston is in its firing position. Loosen the distributor clamp screw and set the housing so that the stationary points just break. Then crank the engine a quarter turn until the mark SYN No. 6 registers with the index line and set the adjustable points so that they break.

8-60, 8-80, 8-90 . . . 1931—No. 3. These cars are timed in the same manner as the 8-50, the only difference is that the 8-60 flywheel is marked ADV 11 and the 8-80 and 9-90 flywheels are marked ADV 10. The figures indicate the number of degrees before TDC that the spark should occur.

32-50 . . . 1932—Two breaker arms, a four-lobe cam and a single ignition coil are used. No. 3. Pushing in the spark control button on the dash advances the spark. Uncover the peep hole at the right side of the flywheel housing. With the spark lever in full advance position, crank the engine until No. 3 exhaust valve starts to open and continue until the line marked ADV 7 on the flywheel registers with the center line of the peep hole. At this point the stationary points should break. Crank the engine a quarter turn until the line marked SYN No. 6 on the flywheel registers with the center line of the peep hole. At this point the adjustable set of points should break.

32-60 . . . 1932—Same as Buick 32-50 except flywheel is marked ADV 11.

32-80, 90 . . . 1932—Same as Buick 32-50 except flywheel is marked ADV 10.

33-50 . . . 1933—A single breaker distributor is used. No. 1. Pushing in the spark control button on the dash advances the spark. With the spark button in full advance position, crank the engine until No. 3 exhaust valve starts to open and the line on the flywheel marked ADV 7 registers with the center line at the peep hole in the right side of the flywheel housing. Loosen the distributor clamp screw and turn the housing until the stationary points just break.

33-60 . . . 1933—The spark is timed the same as described for Buick 33-50 except that the flywheel is marked ADV 11 instead of ADV 7.

33-80, 90 . . . 1933—The spark is timed the same as described for Buick 33-50 except that the flywheel is marked ADV 10 instead of ADV 7.

34-50 . . . 1934—A single breaker distributor is used. There is no manual spark control but a vacuum spark control unit and an octane selector are fitted.

The octane selector is on the instrument panel and consists of a graduated dial and a hand control lever connected to the distributor. Movement of the control lever to the low side of the dial retards the spark for low octant fuel and movement to the high side advances the spark for high octant rating fuel. When the control lever is in its high position the rear of the slot in the timing plate at the distributor should bear against the stop screw. When gasoline having an octane rating of 76 to 78 is used, the control lever should be set at the extreme high position.

Before timing the ignition, set the octane selector in its extreme high position. Crank the engine until No. 3 exhaust valve, fifth from the front, starts to open and continue until the ADV 7 degree mark on the flywheel registers with the center line of the inspection hole in the flywheel housing. Loosen the distributor clamp screw and turn the housing until the breaker points just open. Crank the engine two revolutions and check the adjustment.

34-60 . . . 1934—Instructions are the same as described for Buick 33-50 except that the mark on the flywheel is ADV 11.

34-90 . . . 1934—Instructions are the same as described for the Buick 34-50 except that the mark on the flywheel is ADV 10.

CADILLAC

V8, La Salle . . . 1930, 1932—Distributor point gap .018". Two breaker arms and a four-lobe cam was used, No. 3. With spark lever in full advance position, crank the engine until No. 1 piston is coming up on its compression stroke and continue until line marked IGA-15 registers with pointer on the peep hole. Loosen the distributor clamp screw and turn the housing until the stationary set of points just opens. Then crank the engine ¼ turn until the line IGA-26 registers with the pointer. Loosen the adjustable breaker arm plate screws and turn the eccentric screw until the adjustable set of points just opens. To synchronize the points with a gauge, remove the cam and place the gauge in its place. Do not tighten the screw as the gauge should be free to turn on the shaft. Rotate the gauge until the stationary breaker arm drops into one of the notches. Hold the shoulder of the notch firmly against the breaker arm block and loosen the adjustable breaker arm plate screws. Turn the eccentric screw until the adjustable breaker arm drops into the other notch. In checking the adjustment a slight friction will be felt as the arms are raised from the gauge.

V8 and La Salle . . . 1933—Two breaker arms, a four-lobe cam and a single ignition coil are used. No. 3. There is no manual spark control. Crank the engine until No. 1 piston in the right bank is coming up on its compression stroke and the mark IG/A on the flywheel, 9⅕ degrees or 1⅛ inches ahead of the C 1-4 mark, registers with the pointer at the peep hole in the flywheel housing. Loosen the distributor clamp screw and turn the housing until the stationary points just break. Crank the engine a quarter turn until the IG/A mark for cylinders 2-5 registers with the pointer at the peep hole. Now the adjustable points should break.

The cylinder numbers marked on the flywheel refer to the location of the cylinder. The even numbered cylinders are in the left bank and the odd numbered cylinders are in the right bank.

V12 . . . 1933—A six lobe cam and two breakers each working through an indi-

vidual coil are used No 4 A double-end rotor is used which distributes current to the right bank from one end and to the left bank from the other end The end which takes care of the right bank is connected to the terminal in the center of the distributor The other end of the rotor which furnishes current to the left bank is connected to the off-center terminal There is no manual spark control Crank the engine until No 1 piston in the left bank is coming up on its compression stroke and the mark IG/A on the flywheel, 4 degrees or 1½ inches ahead of the C 1/11 mark, registers with the pointer at the peep hole of the flywheel housing Loosen the cam locking screw and turn the cam until the stationary points just break Tighten the locking screw Crank the engine until the next IG/A flywheel marks, for cylinders 4 and 10, register with the pointer at the flywheel housing peep hole In this position the adjustable points should just break

The cylinder numbers marked on the flywheel refer to the location of the cylinders rather than to the firing order Even numbered cylinders are in the right bank and odd numbers are in the left bank

V16 . . . 1933—An eight-lobe cam and two breakers each working through an individual coil are used No 4 Otherwise it is the same as used on the Cadillac V12 The ignition is timed in the same way too, the only difference being that the IG/A mark which is used for the stationary points is 4 degrees or 1½ inches ahead of the C 1-15 mark on the flywheel The IG/A mark for the adjustable points is for cylinders 8 and 10 The cylinder numbers marked on the flywheel refer to the location of the cylinders as described for the Cadillac V12

V8, V12, V16 . . . 1934—The engine is timed in the same manner as described for 1933 cars, the only difference being that the IG/A marks are 4 degrees ahead of TDC on all models

There is no provision for turning the engine with a crank To time the ignition it is necessary to jack up a rear wheel and turn the engine by the wheel with the transmission in high gear Another way is to push the car with the transmission in high gear.

CHEVROLET

1930, 1931—Distributor point gap 018" A single breaker arm is used, No 1 With the spark lever in full advance position, crank the engine until No 1 piston is coming up on its compression stroke and continue until the DC 1-6 mark on the flywheel registers with the pointer on the peep hole Loosen the distributor clamp screw and turn the housing until the points just open

1932—A single breaker distributor is used No 1 With the manual spark advance lever in full advance position, crank the engine until No 1 piston is coming up on its compression stroke and continue until the 12 degree mark on the flywheel registers with the pointer in the peep hole of the flywheel housing

1933—A single breaker distributor is used No 1 There is no manual spark control A vacuum operated diaphragm advances the spark on part throttle to give greater fuel economy It is also fitted with an octane selector so that the spark advance range can be adjusted from 0 to 10 degrees ahead as measured on the flywheel to get maximum power with best fuel economy. Zero on the scale would be the setting for an engine with some carbon in it and using non-premium fuel The 10 degree setting is for Ethyl gasoline or its equivalent in a clean engine

Set the octane selector at zero and crank the engine until No 1 piston is coming up on its compression stroke and the 10 degree mark on the flywheel registers with the line on the peep hole in the flywheel housing Loosen the distributor clamp screw and turn the housing until the points just break With any given fuel, maximum power and fuel economy are secured by advancing the octant selector just far enough so that the engine knocks slightly on a slow, hard pull

6 . . . 1934—A single breaker distributor is used There is no manual spark control, but a vacuum spark control unit and an octane selector are fitted Instead of the usual timing mark on the flywheel, a bright steel ball is pressed into a hole in the flywheel 10 degrees before TDC This ball should register with the pointer at the opening in the right side of the flywheel housing when the breaker points open to fire No 1 cylinder When the Neon timing light is used, the engine should be run at idling speed The stroboscopic effect of the Neon light makes the ball appear to stand still in relation to the pointer at the flywheel opening The distributor can then be rotated until the ball appears to remain exactly in line with the pointer, when the timing is correct The factory recommend using the Neon light in timing the ignition

The octane selector adjustment is at the distributor When the octane rating of the gasoline being used is known, the following setting is recommended by the factory Each division on the scale represents two degrees

Octane rating of gasoline	Scale setting
40	8 degrees retard
52	6 degrees retard
58	4 degrees retard
64 66	0
72	3 degrees advance
78	6 degrees advance
80	8 degrees advance

CHRYSLER

66 . . 1930—Distributor point gap 020" A single breaker arm is used, No 1 Remove the plug over No 6 cylinder and insert a gauge With spark lever in full advance position, crank the engine until No 6 piston is coming up on its exhaust stroke and continue until it is 020" before TDC on cars up to H-143-EY and 035" before TDC on cars after H-143-EY Loosen the distributor clamp screw and turn the housing until the points just open

70 (Before car P-116 S-E) . . . 1930—Similar to Chrysler 66 except that the piston is stopped when it is 035" before TDC

77, 70 (After car P-116-S-E) . . . 1930—Distributor point gap 022" Two breaker arms and a three-lobe cam are used No 3 Remove the plug over No 6 piston and insert a gauge With spark lever in full advance position, crank the engine until No 6 piston is coming up on its exhaust stroke and continue until it is 068" TDC Loosen the distributor clamp screw and turn the housing until the stationary set of points just opens Crank the engine one full turn, until the piston is again 068" before TDC Loosen the adjustable breaker arm plate screws and turn the adjusting screw until the adjustable set of points just opens

6 . . . 1931—A distributor with a single lever is used No 1 Remove the plug over No 6 piston and insert a gauge Crank the engine until No 6 piston is coming up on its exhaust stroke and continue until it is 034" before TDC This is the firing position for No 1 cylinder Loosen the distributor clamp screw and set the housing so that the points just break

8 . . . 1931—No 3 Remove the plug over No 8 piston and insert a gauge With the spark control button all the way in, crank the engine until No 8 piston is coming up on its exhaust stroke and continue until it is 032" before TDC This is the firing position for No 1 cylinder Set the distributor so that the fixed points just break Crank the engine a quarter turn until No 6 piston is in its firing position, 032" before TDC, and set the adjustable points so that they just break

Imperial 8 . . . 1931—This engine is timed in the same manner as the Chrysler 8 except that the piston is stopped when it is 047' before TDC

6 . . 1932—A single breaker distributor is used No 1 There is no manual spark advance lever Remove the cover from the peep hole on the left side of the flywheel housing directly below the starter Crank the engine until No 1 piston is coming up on its compression stroke and stop when the line on the flywheel marked DC registers with the timing indicator plate at the peep hole Loosen the distributor clamp screw and turn the housing until the points just break The firing point can also be determined by removing the plug over No 6 piston and inserting a gauge When the piston is at TDC the points should break

8 . . . 1932—A single breaker distributor is used and the spark is timed the same as described for the Chrysler 6, No 1 The plug for measuring piston travel is over No 8 piston

Imperial 8 and Imperial Custom 8 . . . 1932—A single breaker distributor is used No 1 There is no manual spark advance lever Remove the plug over No 8 piston and insert a gauge Crank the engine until No 8 piston is coming up on its exhaust stroke and stop when it is 038" before TDC Loosen the distributor clamp screw and turn the housing until the points break

6, Royal 8, Imperial 8 . . . 1933—A single breaker distributor is used No 1 There is no manual spark control Crank the engine until No 1 piston is coming up on its compression stroke and the line on the flywheel marked DC registers with the timing indicator plate at the peep hole in the left side of the flywheel housing, just below the starting motor Loosen the distributor clamp screw and turn the housing until the points just break

Imperial Custom 8 . . . 1933—A single breaker distributor is used No 1 There is no manual spark control Remove the plug over No 8 piston and insert a gauge Crank the engine until No 8 piston is coming up on its exhaust stroke and the piston is 038 inch before top dead center Loosen the distributor clamp screw and turn the housing until the joints just break

DE SOTO

6 . . . 1930—Distributor point gap 020" A single breaker arm is used, No 1 Re-

move the plug over No 6 piston and insert a gauge With spark lever in full advance position, crank the engine until No 6 piston is coming up on its exhaust stroke and continue until it is 030" before TDC Loosen the distributor clamp screw and turn the housing until the points just open

8...1930—Distributor point gap 022" Two breaker arms and a four-lobe cam are used, No 3 Remove the plug over No 8 piston and insert a gauge With spark lever in full advance position, crank the engine until No 8 piston is coming up on its exhaust stroke and continue until it is 037" before TDC Loosen the distributor clamp screw and turn the housing until the stationary set of points just opens Crank the engine one-quarter turn, until No 3 piston is 037" before TDC Loosen the adjustable breaker arm plate screws and turn the adjustable screw until the adjustable set of points just opens

6...1931—This engine is timed in the same manner as the Chrysler 6 except that the piston is stopped when it is 055" before TDC

8...1931—This engine is timed in the same manner as the Chrysler 8 except that the piston is stopped when it is 060" before TDC

6...1932—The spark is timed as described for the Chrysler 6

6...1933—A single breaker distributor is used No 1 There is no manual spark control Uncover the peep hole at the left side of the flywheel housing, directly below the starting motor Crank the engine until No 1 piston is coming up on its compression stroke and the line on the flywheel marked DC registers with the mark IGN 9 degrees on the timing indicator plate Loosen the distributor clamp screw and turn the housing until the points break

DODGE

DD6...1930—Distributor point gap 020" A single breaker arm is used, No 1 Remove the plug over No 6 piston and insert a gauge With the spark lever in full advance position, crank the engine until No 6 piston is coming up on its exhaust stroke and continue until it is 035" before TDC Loosen the distributor clamp screw and turn the housing until the points just open

8...1930—Distributor point gap 022" Two breaker arms and a four-lobe cam are used, No 3 Remove the plug over No 8 piston and insert a gauge With the spark lever in full advance position, crank the engine until No 8 piston is coming up on its exhaust stroke and continue until it is 040" before TDC Loosen the distributor clamp screw and turn the housing until the stationary set of points just opens Crank the engine one-quarter turn until No 3 piston is 040" before TDC Loosen the adjustable breaker arm plate screws and turn the adjusting screw until the adjustable set of points just opens

6...1931—This engine is timed in the same manner as the Chrysler 6 except that the piston is stopped when it is 032" before TDC

8...1931—This engine is timed in the same manner as the Chrysler 8 except that the piston is stopped when it is 019" before TDC

6. .1932—The spark is timed as described for the Chrysler 6

8...1932—The spark is timed as described for the Chrysler 8

6, 8...1933—A single breaker distributor is used No 1 There is no manual spark control Uncover the peep hole at the left side of the flywheel housing directly below the starting motor Crank the engine until No 1 cylinder is coming up on its compression stroke and the line on the flywheel marked DC registers with the mark IGN on the timing indicator plate Loosen the distributor clamp screw and turn the housing distributor until the points just break

DURANT

6-14, 6-17...1930—Distributor point gap 020" A single breaker arm is used, No 1 With the spark lever in full advance position, crank the engine until No 1 piston is coming up on its compression stroke and continue until the mark IGN on the flywheel registers with the pointer on the peep hole Loosen the distributor clamp screw and turn the housing until the points just open

ESSEX

Super 6...1930, 1931, 1932—Distributor point gap 020" A single breaker arm is used, No 1 There is no manual advance lever Crank the engine until No 1 piston is coming up on its compression stroke and continue until the line following the mark UDC 1-6 on the flywheel is in line with pointer on the peep hole Loosen the screw holding the distributor and turn the housing clockwise to the end of the slot in the clamping plate Then turn the housing in the opposite direction until the points just open

Terraplane 6, Hudson Super 6...1933—A single breaker distributor is used, No 1 There is no manual spark control Crank the engine until No 1 piston is coming up on its compression stroke and the mark DC 1-6 on the flywheel is exactly in line with the pointer at the peep hole Loosen the distributor clamp screw and turn the distributor clockwise to the full limit permitted by the slot in the clamping plate Turn the distributor counter clockwise until the points just break

Terraplane 8, Hudson 8...1933—Two breaker arms, a four-lobe cam and a single ignition coil are used No 3 There is no manual spark control Crank the engine until No 1 piston is coming up on its compression stroke and the mark DC/1 8 on the flywheel is exactly in line with the pointer at the peep hole Loosen the distributor clamp screw and turn the distributor clockwise the full limit permitted by the slot in the clamping plate Turn the distributor slowly counter-clockwise until the stationary points just break Tighten the distributor clamp screw Crank the engine a quarter turn until the mark DC/3-6 on the flywheel is exactly in line with the pointer at the peep hole In this position the adjustable points should just break.

FORD

A—Distributor point gap .018". A single breaker arm is used, No 1 Take the timing pin out of the front of the timing case cover and insert the opposite end in the hole With the spark lever in full retard position, crank the engine, while pressing on the timing pin, until the end of the pin slips into a recess in the camshaft gear This is the firing point for No 1 cylinder Loosen the cam locking screw on top of the cam until the cam can be turned Turn the cam counter-clockwise until the points just open Tighten the cam screw and insert the timing pin in its original position

B...1932, 1933—A single breaker distributor is used Loosen the spark control arm lock screw and place the arm exactly central with the groove in the distributor body Tighten the screw Take the timing pin out of the front of the timing case cover and insert the opposite end of the pin in the hole Crank the engine, while pressing on the timing pin, until the end of the pin slips into a recess in the camshaft gear This is the firing position for No 1 cylinder Remove the distributor cover and lift off the rotor and distributor body Loosen the cam locking screw on top of the cam Turn the cam counter-clockwise until the points are fully opened, then turn it clockwise until the points just close Tighten the cam locking screw and insert the timing pin in its original position Breaker gap is 018"

V8...1932, 1933—The distributor is located at the front of the engine and driven direct by the camshaft An eight-lobe cam with two breaker arms and a single ignition coil are used One set of points opens the circuit and the other closes the circuit, permitting the circuit to be closed longer and eliminating the necessity of synchronizing There is no manual spark control A vacuum brake automatically retards the spark in direct proportion to the load

Remove the rubber plugs in the housing to adjust the points Be sure that the breaker arm is on the high spot of the cam when setting the gap, bearing in mind that both breaker arms are never on the high point of the cam at the same time Breaker gap is 015"

After checking the breaker gap, remove the suction line and the adjusting nut and inspect the vacuum brake piston for binding in its housing It must work freely. Install the vacuum brake spring, adjusting nut and lock nut, screwing the adjusting nut down not more than 2 or 3 turns Lock it in this position Set the breaker plate adjustment screw at the center of the slot in the distributor body Lock it in this position A distinct ping should now be heard when the engine speed is accelerated Adjust tension on the vacuum brake spring by means of the adjusting nut until the ping on acceleration is removed Do not screw the adjusting nut down more than is actually required to remove the ping or the spark will not advance correctly for less rapid acceleration

FRANKLIN

Six...1930—Distributor point gap 020" A single breaker arm is used, No 1 With spark lever in full advance position crank the engine until No 6 exhaust valve just closes and stop when the △ mark on the fan is 7/8" to the right, generator side, of the line on the side of the fan housing Loosen the distributor clamp screw and turn the housing until the points just open.

Six... 1931, 1933—A distributor with a single lever is used, No 1 With the spark advance all the way in, crank the engine until No 6 exhaust valve closes, No 1 piston will be coming up on its compression stroke, and continue until the "O" in the fan rim is one inch to the right, generator side, of the line on the inside of the fan housing Loosen the distributor clamp screw and set the housing so that the points just break

To make sure that both sets of points break at the same time, put a piece of paper between each set of points and crank the engine Pull on the papers lightly and both should release at the same instant

V12... 1932, 1933—A six-lobe cam and two breakers, each working through an individual coil, are used, No 4 Pushing in the spark control button on the dash advances the spark With the spark control button in its full advance position, crank the engine until No 1 exhaust valve in the left bank just closes and the second O mark in the fan rim is ¾ inch to the right (right from driver's seat) of the line on the inside of the fan housing The wire in the center of the distributor head leads to the stationary points for the left bank Loosen the distributor housing clamp screw and turn the distributor until the stationary points just break

Now turn the engine over two complete revolutions and slowly approach the point where the first hole (to the left of the driver s seat) in the fan rim is ¾ inch ahead of the line in the fan housing At this point the adjustable points should just break The wire in the terminal outside the center terminal of the distributor block leads to the adjustable points for the right bank

As two ignition coils are used, each bank of cylinders is wired as a six cylinder engine with a firing order 142635 The wiring order on the distributor block is 1R, 1L, 4R, 4L, 2R, 2L, 6R, 6L, 3R, 3L, 5R, 5L

GRAHAM

Standard 6, Special 6... 1930—Distributor point gap 020' A single breaker arm is used, No 1 With spark lever in full advance position, crank the engine until No 1 piston is coming up on its compression stroke and continue until the mark IGN1 on the flywheel registers with the pointer on the peep hole Loosen the distributor clamp screw and turn the housing until the points just open

Standard 8, Special 8... 1930—Distributor point gap 020" Two breaker arms and a four-lobe cam are used, No 3 With spark lever in full advance position, crank the engine until No 1 piston is coming up on its compression stroke and continue until the mark S F ADV-1 on the flywheel registers with the pointer on the peep hole Loosen the distributor clamp screw and turn the housing until the stationary set of points just opens Turn the engine a quarter turn until the mark S F ADV-6 registers with the line on the peep hole Loosen the adjustable breaker arm plate screws and turn the adjusting screw until the adjustable set of points just opens To synchronize the points with a gauge, place the gauge on the shaft with the spring in the slot in the cam, indicated by the arrow for the direction of rotation After the gauge is in place, its operation is the same as the gauge used on the Buick 50

Standard and Special 6... 1931, 6... 1932—A distributor with a single lever is used, No 1 With the spark fully advanced, crank the engine until No 1 piston is coming up on its compression stroke and continue until the line marked S F ADV-1 on the flywheel registers with the pointer in the peep hole on the left side of the flywheel housing This is 1 degree or 7/64 inch before TDC measured on the flywheel Loosen the distributor clamp screw and set the housing so that the points just break

Special and Custom 8... 1931—No 3 With the spark fully advanced, crank the engine until No 1 piston is coming up on its compression stroke and continue until the line marked S F ADV-1 on the flywheel registers with the pointer on the peep hole in the left side of the flywheel housing On the Special 8 this is 6 degrees or 5/8 inch before TDC measured on the flywheel On the Custom 8 this mark is 5 degrees or 35/64 inch before TDC measured on the flywheel Loosen the distributor clamp screw and set the housing so that the stationary points just break Then crank the engine a quarter turn until the line marked S F ADV-6 registers with the pointer Loosen the plate holding the adjustable points and set it so that the points just break

8... 1932—Two breaker arms, a four-lobe cam and a single ignition coil are used, No 3 With the spark lever in full advance position, crank the engine until the SA-1 mark on the flywheel registers with the pointer on the peep hole of the flywheel housing Loosen the distributor clamp screw and turn the housing until the stationary points break Crank the engine a quarter of a turn until the mark S F ADV-6 registers with the pointer on the peep hole At this point the adjustable points should break

Standard 6... 1933—A single breaker distributor is used, No 1 There is no manual spark control Crank the engine until No 1 piston is coming up on its compression stroke and the mark SA-1 on the flywheel registers with the pointer at the peep hole in the flywheel housing This is 3 degrees or 5/16 inch on the flywheel before the top dead center mark Loosen the distributor clamp screw and turn the housing until the points just open

Standard, Custom 8... 1933, 1934—Two breaker arms, a four lobe cam and a single ignition coil are used, No 3 There is no manual spark control Crank the engine until No 1 piston is coming up on the compression stroke and the mark SA-1 on the flywheel registers with the pointer at the peep hole in the flywheel housing This is 3 degrees or 5/16 inch on the flywheel before the top dead center mark (DC-1) Loosen the distributor clamp screw and turn the housing until the stationary points just break Crank the engine a quarter turn until the mark C F ADV-6 on the flywheel registers with the pointer at the peep hole in the flywheel housing In this position, the adjustable points should just break

6... 1934—A single breaker distributor is used With the manual spark control lever in its full advance position crank the engine until No 1 piston is coming up on its compression stroke and the line on the flywheel marked S-A-1 registers with the pointer on the flywheel housing This is 3 degrees or 5/16 inches on the flywheel before TDC Loosen the distributor clamp screw and turn the housing until the points just break

HUDSON

8... 1930, 1932—Distributor point gap 020" Two breaker arms and a four-lobe cam are used, No 3 There is no manual advance lever Crank the engine until No 1 piston is coming up on its compression stroke and continue until the line following the mark UDC 1-8 on the flywheel registers with the pointer on the peep hole Loosen the distributor clamp screw and turn the housing clockwise as far as the slot will permit Turn the housing counter clockwise until the stationary set of points just opens Tighten the clamp screw Crank the engine a quarter turn until the line following the mark UDC 3-6 registers with the pointer Loosen the adjustable breaker arm plate screws and move the adjusting plate until the points just open To synchronize the points with a gauge, set the points to the correct gap and time the stationary set of points On the top of the rotor will be found two timing lines 45 degrees apart Place the gauge on the housing so that the pointer registers with the forward mark on the rotor, depending on the rotation of the distributor Crank the engine a quarter turn until the pointer registers with the other mark on the rotor Loosen the adjustable plate fastening screws and move the adjustable plate until the points just open

6 ..1933—(*See Essex*)

8 ..1934—A single breaker distributor is used There is no manual spark control Crank the engine until No 1 piston is coming up on its compression stroke and the line marked UDC 1 8 on the flywheel registers with the pointer on the rear engine support plate, near the starting motor Loosen the distributor housing clamp screw and turn the distributor housing until the breaker arm is on the highest point of the cam The gap at this time should be exactly 020 Turn the distributor housing counter clockwise to the limit of the slot in its clamping plate Now turn the housing clockwise until the points just break

To take care of variations in fuel characteristics there is another adjustment To make this setting, run the engine until it has reached its normal temperature Allow the car to slow down to 8 miles per hour in high gear on a level hard-surfaced road, then depress the accelerator rapidly to the limit of its travel As the car accelerates from 10 to 15 miles per hour a slight spark knock should develop If a knock is not heard, loosen the distributor clamp screw and turn the distributor clockwise one graduation of the clamping plate and repeat test till knock is heard

HUPMOBILE

S... 1930—Distributor point gap 015". A single breaker arm is used, No 1. With spark lever in full retard position, crank the engine until No 1 piston is coming up on its compression stroke and the line marked DC 1 6 on the flywheel registers with the finished bosses of the clutch housing Loosen the distributor clamp screw and turn the housing until the points just open

H, C, U... 1930, 1931—Distributor point gap 022' Two breaker arms and a four-lobe cam are used, No 3 With spark lever in full retard position, crank the engine until No 8 piston is coming up on its compression stroke and the mark 1-8 on flywheel registers with the mark on the peep hole The rotor should be under No 8 terminal of the distributor

block. Loosen the distributor clamp screw and turn the housing until the stationary set of points just opens. Turn the engine a quarter of a revolution until the mark 4-5 on the flywheel registers with the peep hole line. Loosen the adjustable breaker arm plate screws and turn the adjusting screw until the adjustable set of points just opens. There is a line 1 inch ahead of the flywheel marks that is used when the engine is timed with the spark lever in full advance position.

216...1932—A single breaker distributor is used, No. 1. Pushing in the spark control button on the dash advances the spark. With the spark lever in full advance position, crank the engine until No. 1 piston is coming up on its compression stroke and the mark DC 1-6 on the flywheel registers with the finished bosses on the front face of the flywheel housing peep hole. At this point No. 1 and No. 6 pistons are at TDC. Loosen the distributor clamp screw and turn the housing until the points break.

222...1932—Two breaker arms, a four-lobe cam and a single ignition coil are used, No. 3. Pushing in the spark control button on the dash advances the spark. With the spark lever in full retard position, crank the engine until the 1-8 mark on the flywheel registers with the center line of the peep hole in the flywheel housing. Loosen the distributor clamp screw and turn the housing until the stationary points break. Crank the engine a quarter turn until the mark 4-5 on the flywheel registers with the center line of the peep hole. There are lines on the flywheel 1⅛ inches ahead of the 1-8 and 4-5 marks which are used when the spark is set with the spark control lever in full advance position.

226...1932—The spark is timed the same as the Hupmobile 222 except that the line used for timing with the spark lever advanced is 1 inch ahead of the 1-8 and 4-5 marks.

321...1933—A single breaker distributor is used, No. 1. Pushing in the spark control button on the dash advances the spark. With the spark control button in full retard position, crank the engine until No. 1 cylinder is coming up on its compression stroke and the line on the flywheel marked DC/1-6 is in line with the finished bosses on the front face of the clutch housing peep hole. Loosen the distributor clamp screw and turn the housing until the points just break. There is a mark on the flywheel 7 degrees ahead of the DC/1-6 mark which can be used if the engine is timed with the spark control button in full advance position.

322, 326...1933—Two breaker arms, a four-lobe cam and a single ignition coil are used, No. 3. Pushing in the spark control button on the dash advances the spark. With the spark control button in full retard position, crank the engine until No. 1 cylinder is coming up on its compression stroke and the mark 1-8 on the flywheel registers with the center line of the peep hole in the flywheel housing. Loosen the distributor clamp screw and turn the housing until the stationary points just break. Crank the engine a quarter turn until the marks 4-5 on the flywheel registers with the center line of the peep hole. In this position the adjustable points should just break. There are lines on the flywheel 15/16 inch or 9 degrees ahead of the 1-8 and 4-5 marks which can be used if the ignition is set with the spark button in full advance position.

LA SALLE

(See Cadillac.)

LINCOLN

V8...1931, 1932—Two breaker arms, a four-lobe cam and rotor with two fingers is used, No. 4. With the spark lever in full advance position, crank the engine until No. 1 piston in the left bank is coming up on its compression stroke and the line marked A2 on the flywheel registers with the pointed screw at the peep hole. In this position the stationary points should just open. Crank the engine until No. 1 piston in the right bank is coming up on its compression stroke and the line marked A1 on the flywheel registers with the pointed screw at the peep hole. In this position the adjustable points should just break.

V12...1932, 1933, 1934—A six-lobe cam and two breakers each working through an individual coil are used, No. 4. The same type distributor described for the Cadillac V12 is used. With the spark control lever in its full advance position, crank the engine until No. 1 piston in the right bank is coming up on its compression stroke and the mark A/2 on the flywheel registers with the pointer at the peep hole. Loosen the cam locking screw and turn the cam until the stationary points just break. Tighten the locking screw. Crank the engine until the mark A/1 on the flywheel registers with the pointer at the peep hole. In this position the adjustable points should just break to fire No. 1 cylinder in the left bank.

MARMON

69, 79, Big 8 and Roosevelt...1930—Distributor point gap .022". Two breakers and a four-lobe cam are used, No. 3. With the spark lever in full advance position, crank the engine until No. 1 piston is coming up on its compression stroke. Watch for the DC mark on the flywheel and stop when it is two teeth before the pointer on the peep hole. Loosen the distributor clamp screw and turn the housing until the stationary set of points just opens. Turn the engine one quarter revolution until the DC mark on the flywheel is two teeth before the pointer on the peep hole. Loosen the adjustable breaker arm plate screws and turn the adjusting screw until the adjustable set of points just opens.

70...1931—No. 3. With the spark control button all the way in, crank the engine until No. 1 piston is coming up on its compression stroke and continue until the TDC mark on the flywheel is within three teeth of the pointer on the peep hole in the flywheel housing. Loosen the distributor clamp screw and set the housing so that the stationary points just break. Crank the engine a quarter turn, until the DC mark is within three teeth of the pointer on the peep hole. Loosen the adjustable breaker arm plate screws and set the plate so that adjustable points just break.

16...1931, 1932—If the breaker gap is over .020" simultaneous firing of two cylinders is apt to result. Two breaker arms, an eight-lobe cam and two ignition coils are used. No. 4. With the spark control lever in full advance position crank the engine until No. 1 position in the left bank of cylinders is coming up on its compression stroke and continue until the mark IGN-L1 on the flywheel registers with the pointer on the peep hole in the right front side of the flywheel housing. At this point the stationary points should just break. Crank the engine ⅞ of a turn until the mark IGN-R1 on the flywheel registers with the peep hole pointer. At this point the adjustable points should break.

16...1933—An eight-lobe cam and two breakers each working through an individual coil are used. No. 4. The left bank of cylinders is fired by the stationary points and the right bank is fired by the adjustable points. The firing order for the engine is marked on the distributor cap and each terminal is marked for the cylinder it is to fire. If the breaker gap is over .020" simultaneous firing of two cylinders is apt to result. With the spark control lever in full advance position, crank the engine until No. 1 piston in the left bank is coming up on its compression stroke and the mark IGN-L1 on the flywheel registers with the pointer at the peep hole in the right front side of the flywheel housing. Loosen the distributor clamp screw and turn the housing until the stationary points just break. Crank the engine ⅞ of a turn until the mark IGN-R1 on the flywheel registers with the peep hole pointer. In this position the adjustable points should just break.

MARQUETTE

1930—Distributor point gap .018". A single breaker arm is used, No. 1. With spark lever in full advance position, crank the engine until No. 1 piston is coming up on its compression stroke and continue until the line marked ADV-7 on the flywheel is directly opposite the index line on the peep hole. Loosen the distributor clamp screw and turn the housing until the points just open.

NASH

Single 6...1930—Distributor points gap .020". A single breaker arm is used, No. 1. There is no manual advance lever. Crank the engine until No. 1 piston is coming up on the compression stroke and continue until the first notch in the flywheel registers with the pointer on the engine rear support arm. Loosen the distributor clamp screw and turn the housing until the points just open.

Twin Ignition 6 & 8...1930—Distributor point gap .020". Two breaker arms, condensers and coils and a six- or eight-lobe cam are used, No. 5. With spark lever in full advance position, crank the engine until No. 1 piston is coming up on its compression stroke and the notch in the front flywheel marked IGN registers with the pointer on the timing gear case cover. Loosen the distributor clamp screw and turn the housing until the stationary set of points just opens. Loosen the adjustable breaker arm plate screws and turn the plate until the adjustable set of points just opens. There are two primary terminals on the distributor and two timing lights must be used.

8-70...1931—No. 3. Crank the engine until No. 1 piston is coming up on its compression stroke and continue until the first notch in the flywheel registers with

the pointer on the right rear engine support arm Loosen the distributor clamp screw and set the housing so that the stationary points just break Crank the engine a quarter turn, measured either on a gauge or by the markings on the flywheel, and set the adjustable points so that they just break

Big 6...1932, 1933—A single breaker distributor is used No 1 There is no manual spark control Crank the engine until No 1 piston is coming up on its compression stroke and the line marked IGN, the first line on the front vibration dampener, is directly under the pointer on the timing chain cover Loosen the distributor housing clamp screw and turn distributor until the points just break

Standard 8, Special 8...1932-33—Two breaker arms, a four-lobe cam and a single ignition coil are used No 3 There is no manual spark control Crank the engine until No 1 piston is coming up on its compression stroke and the line marked IGN on the front vibration dampener is directly under the pointer on the timing chain case cover Loosen the distributor housing clamp screw and turn the distributor until the stationary points just break Crank the engine a quarter turn until the single line on the front vibration dampener is directly under the pointer on the timing chain case cover Now the adjustable points should just break

Advanced 8, Ambassador 8...1932, 1933, Special 8...1932—Two breaker arms, an eight-lobe cam and two ignition coils are used No. 5 Pushing in the spark control button on the dash advances the spark With the spark control button in full advance position, crank the engine until No 1 piston is coming up on its compression stroke and the mark IGN on the front vibration dampener is directly under the pointer on the timing chain case cover Loosen the distributor housing clamp screw and turn the distributor until the stationary points just break The adjustable points must also be set so that they just break too

Big 6...1934—Two breaker arms, a six-lobe cam and two ignition coils are used There is no manual spark control Crank the engine until No 1 piston is coming up on its compression stroke and the IGN mark on the front vibration dampener is directly under the pointer on the timing chain cover Loosen the distributor clamp screw and turn the distributor housing until the stationary points just break As both points must break at the same instant to obtain full advantage of twin ignition, a timing light is recommended to check the opening of the adjustable points

Advanced 8, Ambassador 8...1934—Two breakers, an eight-lobe cam and two ignition coils are used The timing instructions are the same as for the Nash Big 6

OAKLAND

8...1930—Distributor point gap 022" Two beaker arms and a four-lobe cam are used, No 3 There is no manual advance lever Crank the engine until No 1 piston is coming up on its compression stroke and the mark 1&7 IGN registers with the pointer on the peep hole Loosen the distributor clamping screw and turn the housing until the stationary set of points just opens Turn the engine one-quarter revolution until the mark 4&6 IGN registers Loosen the adjustable breaker arm plate screws and turn the adjusting screw until the adjustable set of points just open The stationary set of points fire the odd numbered cylinders on the left side and the adjustable set of points fire the even numbered cylinders on the right

8...1931—No 3 Crank the engine until the line marked 1&7 IGN registers with the pointer on the peep hole in the left side of the flywheel housing Loosen the distributor clamp screw and set the housing so that the stationary points just break Without moving the engine, set the adjustable points so that they also just break

OLDSMOBILE

1930, 1932—Distributor point gap 022". A single breaker arm is used, No 1 There is no manual advance lever. Crank the engine until No. 1 piston is coming up on its compression stroke and continues until the O on the flywheel lines up with the pointer on the peep hole Loosen the vertical distributor clamp screw and move the advance and retard indicator to a position two notches from the center, in retard direction Lock the screw Loosen the horizontal distributor clamp screw and turn the distributor until the points just open Tighten this screw Loosen the vertical clamp screw again and move the indicator two notches in counter clockwise direction Tighten the screw

6 .1933—A single breaker distributor is used No 1 There is no manual spark control Crank the engine until No 1 piston is coming up on its compression stroke and the mark on the outside of the vibration dampener registers with the pointer on the chain cover Loosen the distributor clamp screw and turn the housing until the points just break

8...1933—Two breaker arms, a four-lobe cam and a single ignition coil are used No 3 There is no manual spark control Crank the engine until No 1 piston is coming up on its compression stroke and the mark on the vibration dampener registers with the pointer on the timing chain case cover Loosen the distributor housing clamp screw and turn the housing until the stationary points just open Synchronize the adjustable points with a gauge

PACKARD

1930—Distributor point gap 015". Two breaker arms and an eight-lobe cam are used, No 2 With spark lever in full advance position, crank the engine until No 1 piston is coming up on its compression stroke and continue until the line marked S-1, 29/32" before the UP D C 1 mark on the flywheel, registers with the pointer in the starting motor hole Loosen the distributor clamp screw and turn the housing until the stationary set of points just open To check the adjustable set of points, put a piece of paper between both sets of points Keep a tension on each paper and crank the engine Both papers should release at the same instant

1931, 1932, 1933, 1934—No 3 With the spark button all the way in, crank the engine until No 1 piston is coming up on its compression stroke and continue until the line marked S on the flywheel registers with the pointer in the starting motor hole, 29/32 inch ahead of the UPDC 1 mark Loosen the distributor clamp screw and set the distributor so that the stationary points just break Set the adjustable points and check the adjustments by the same method as described under Oakland

PEERLESS

1930, 1931—Distributor point gap 020". Two breaker arms and a four-lobe cam are used, No 3 With the spark lever in full retard position, crank the engine until No 1 piston is coming up on its compression stroke and continue until the IGN mark on the flywheel registers with the pointer on the peep hole Loosen the distributor housing and turn the housing until the stationary points just open Crank the engine one-quarter revolution until the IGN mark again registers Loosen the adjustable breaker arm plate screws and remove the plate until the adjustable points just open

PIERCE-ARROW

A, B...1930, 43, 42, 41...1931—Distributor point gap, 018" Two breaker arms, a four-lobe cam and a rotor with two fingers are used, No 4 There are two higher tension terminals on the distributor block The center terminal fires cylinders 1287 and the offset terminal fires cylinders 6534 Because of the double rotor the wiring order is different from the firing order, the wiring order being 13248675 With the spark lever in full retard position, crank the engine until the mark BDC 1-8 on the flywheel registers with the pointer on the peep hole Loosen the distributor clamp screw and turn the housing until the stationary points open Then crank the engine ¼ turn until the mark BDC 6-3 registers with the pointer Loosen the adjustable breaker arm plate screws and turn the adjusting screw until the adjustable set of points open

C...1930—Distributor point gap 018". Two breaker arms and a four-lobe cap are used, No 3 With the spark lever in full retard position, crank the engine until No 5 piston is coming up on its compression stroke and continue until the mark BDC 5-4 registers with the pointer on the peep hole With the rotor under No 5 terminal, loosen the distributor clamp screw and turn the housing until the stationary set of points just opens Turn the engine one-quarter revolution until the BDC 1-8 mark registers with the pointer Loosen the adjustable breaker arm plate screws and turn the adjusting screw until the adjustable set of points just opens

8...1932, 1933, 1934—Two breaker arms, a four lobe cam and a single ignition coil are used, No 3 Pushing in the spark control button on the dash advances the spark With the spark control button in its full advance position, crank the engine until No 4 piston is coming up on its compression stroke and the IGN/4-5 mark on the flywheel is centered with the pointer at the peep hole Loosen the distributor clamp screw and turn the housing until the stationary points just break Crank the engine a quarter revolution until the IGN/1-8 mark on the flywheel is centered with the pointer at the peep hole In this position the adjustable points should just break

12...1932, 1933, 1934—A six-lobe cam and two breakers, each working through an individual coil, are used, No 4 The left bank of cylinders is fired by the stationary points and the right bank is fired by the adjustable points The distributor cam is locked in position by a holding screw in the rotor shaft, thereby making it possible to time the opening of the stationary points by shifting the rotor cam

With the spark control button in its full advance position, crank the engine until No 1 piston in the left bank is coming up on its compression stroke and the IGN/No 1 mark on the flywheel is in direct alignment with the pointer at the peep hole The locking screw for the cam should be loosened and the cam turned to a point where the stationary breaker points just open Tighten the cam locking screw Crank the engine until the IGN/No 4 mark on the flywheel is in direct alignment with the pointer at the peep hole In this position the adjustable points should just break

PLYMOUTH

Four . . . 1930, 1931, 1932—Distributor point gap 020' A single breaker arm is used, No 1 Remove No 1 spark plug and insert a gauge With the spark lever in full retard position, crank the engine until No 1 piston is coming up on its compression stroke and continue until it is 050" before TDC Loosen the distributor clamp screw and turn the housing until the points just open

6 . . . 1932—A single breaker distributor is used, No 1 For road driving conditions the spark is automatically advanced by centrifugal weights A mechanical vacuum control retards the spark at low engine speeds when the engine is idling and the throttle closed When cranking by hand, the spark is in full retard position and advances the moment the engine starts to run under its own power Remove the pipe plug over No 4 piston and insert a gauge Crank the engine until No 4 piston is coming up on its exhaust stroke and stop when it is 046" before TDC Loosen the distributor clamp screw and turn the housing until the points break

6 . . . 1933—A single breaker distributor is used, No 1 There is no manual spark control Uncover the peep hole at the left side of flywheel housing directly below the starting motor. Crank the engine until No 1 piston is coming up on its compression stroke and the line on the flywheel marked DC registers with the mark on the timing indicator plate marked IGN 10°. Loosen the distributor housing clamp screw and turn the distributor until the points just open

PONTIAC

6 . . . 1930, 1931—Distributor point gap 022" A single breaker arm is used, No 1 There is no manual advance lever Crank the engine until No 1 piston is coming up on its compression stroke and continue until the mark 1&6 IGN registers with the pointer on the peep hole Loosen the distributor clamp screw and turn the housing until the points just open

6 . . . 1932—A single breaker distributor is used, No 1 There is no manual advance lever Crank the engine until the first Ignition 1 and 6 mark on the flywheel registers with the pointer in the peep hole of the flywheel housing Line up the zero mark on the indicator with the stamped mark on the cylinder head Turn the distributor housing until the points just break There are two Ignition 1 and 6 marks on the flywheel, the first or lower mark being 8 degrees ahead of TDC and the second or upper mark being 4 degrees ahead of TDC Setting at the lower or advanced position compensates for wear on the breaker arm rubbing block

8 . . . 1932—A single breaker distributor is used, No 1 There is no manual spark advance lever Crank the engine until the first Ignition 1 and 7 mark on the fly wheel registers with the pointer on the peep hole of the flywheel housing Turn the distributor housing counter-clockwise until the points just break Line up the pointer on the distributor housing with the zero mark on the indicator plate There are two Ignition 1 and 7 marks on the flywheel The first or lower mark is 11 degrees ahead of TDC and the second or upper mark is 7 degrees ahead of TDC Setting at the lower mark compensates for any slight wear on the breaker arm rubbing block

8 . . . 1933—A single breaker distributor is used, No 1 There is no manual spark control Set the indicator arm at O Crank the engine until No 1 piston is coming up on its compression stroke and the first IGN/1 8 mark on the flywheel registers with the pointer at the peep hole Loosen the distributor clamp screw and turn the housing until the points just break

8 . . . 1934—A single breaker distributor used There is no manual spark control but a vucuum spark control unit and a Gaselector are fitted The flywheel is marked IGN 1 & 8 with a line on either side of the marking A 5-degree range in spark setting is indicated between the two lines The lower line is 9 degrees ahead of TDC and the second line is 4 degrees ahead of TDC This is to provide a limit of adjustment in setting the spark to compensate for variations in distributor advance weights, etc Crank the engine until the first or lower IGN 1&8 line on the flywheel registers with the pointer on the flywheel housing Loosen the distributor clamp bolt and turn the housing until the points just break Crank the engine two revolutions until the points just break again and check the adjustment

A Gaselector is on the distributor so that the ignition timing can be changed to get maximum performance from the various grades of fuel that may be used An indicator arm is clamped to the distributor arm and held in place by a thumb screw Graduated markings are on the arm From the center marking, graduations are shown to a limit of 10 degrees advance and 10 degrees retard Loosening the thumb screw and moving the indicator counter-clockwise retards the ignition When timing the ignition with the flywheel, always return the indicator arm to 0 Use this indicator as a means of timing the ignition only after timing has been correctly adjusted Attention should be paid to the position of the distributor before loosening the thumb screw as tension against the distributor from the vacuum suction tube may cause the selector arm to move when the thumb screw is loosened

REO

Flying Cloud 15 . . . 1930—Distributor point gap 020" A single breaker arm is used, No 1 Remove the plug over No 6 cylinder and insert a gauge With the spark lever in full advance position, crank the engine until No 6 piston is coming up on its compression stroke and continue until it is 008' before TDC At this point the UDC mark on the flywheel will be ½ before the pointer on the peep hole Loosen the distributor clamp screw and turn the housing until the points just open

Flying Cloud 20, 25 . . . 1930—Distributor point gap 020" A single breaker arm is used, No 1 With the spark lever in full advance position, crank the engine until No 1 piston is coming up on its compression stroke and continue until the line 1¼" ahead of the UDC mark on the flywheel registers with the line on the peep hole Loosen the distributor clamp screw and turn the housing until the points just open

30, 35 . . . 1931—No 3 With the spark button all the way in, crank the engine until No 1 piston is coming up on its compression stroke and continue until it is 014" before TDC Loosen the distributor clamp screw and set the housing so that the stationary points just break Crank the engine a quarter turn, until No 6 piston is 014' before TDC, and set the adjustable points so that they just break

621 and 625 . . . 1932—A single breaker distributor is used, No 1 Pushing in the spark control button on the dash advances the spark Remove the peep hole cover in the right side of the flywheel housing and pull the spark control button out as far as possible to retard the spark Crank the engine and make a mark on the flywheel with chalk or pencil 1¼" ahead of the UDC No 1 mark on the flywheel Crank the engine until No 1 piston is coming up on its compression stroke and continue until the mark you made on the flywheel registers with the reference mark on the peep hole Loosen the distributor clamp screw and turn the housing until the points break

821 and 825, 1932—Two breaker arms, a four-lobe cam and a single ignition coil are used, No 3 Pushing in the spark button on the dash advances the spark The distributor is driven off the generator so that when the timing chain is disturbed the ignition timing must be checked Remove the inspection plate in the top of the flywheel housing With the spark control lever in full advance position, crank the engine until No 1 piston is coming up on its compression stroke and continue until the line on the flywheel marked INTAKE OPENS registers with the line at the rim of the peep hole This is 5 degrees before top dead center as designated by the letters UDC on the flywheel Loosen the distributor clamp screw and turn the distributor until the stationary points just break Crank the engine a quarter turn At this point the adjustable points break

8-31, 8-35 . . . 1932, 1933, 1934—Two breaker arms, a four-lobe cam and a single ignition coil are used, No 3 Pushing in the spark control button on the dash advances the spark Remove the peep hole cover on the top of the flywheel housing With the spark control button on the dash all the way in, crank the engine until No 1 piston is coming up on its compression stroke and continue until the line on the flywheel ¾" ahead of the UDC mark on the flywheel registers with the reference mark on the peep hole Loosen the distributor clamp screw and turn the distributor until the stationary points break Crank the engine a

quarter turn until the line on the flywheel again registers with the reference mark on the flywheel At this point the adjustable points break

S... 1933, 1934—A single breaker distributor is used, No 1 With the spark control lever in full advance position, crank the engine until No 1 piston is coming up on its compression stroke and is 012 inch before TDC This position can be measured with a gauge or by markings on the flywheel through an inspection hole on the right rear engine leg When measured on the flywheel, it is two full teeth before the TDC mark on the flywheel Loosen the distributor clamp screw and turn the housing until the points just break

ROCKNE

Six... 1932, 1933—A single breaker distributor is used, No. 1 There is no manual spark control. Crank the engine until No 1 piston is coming up on its compression stroke and the punch mark on the flywheel ½" before the UDC 1-6 mark is directly under the pointer at the peep hole in the forward side of the engine rear plate, just below the starting motor Loosen the distributor clamp screw and turn the housing until the points just break

STUDEBAKER

Commander 6, Dictator 6, Erskine 53 ... 1930—Distributor point gap 020" A single breaker arm is used, No 1 With the spark lever in full advance position, crank the engine until No 1 piston is coming up on its compression stroke and continue until the punch mark about 1 ahead of the DC 1-6 mark on the flywheel registers with the pointer on the peep hole Loosen the distributor clamp screw and turn the housing until the points just open The ignition can also be set by using the DC 1-6 mark if the spark lever is 1/3 retarded

Commander 8, Dictator 8... 1930—Distributor point gap 020". Two breaker arms and a four-hole cam are used, No 3 With the spark lever in full advance position, crank the engine until No 1 piston is coming up on its compression stroke and continue until the punch mark about 1 ahead of the 1 8 TDC mark on the flywheel registers with the pointer on the peep hole Loosen the distributor clamp screw and turn the housing until the stationary set of points just opens Crank the engine one-quarter turn until the 3-6 TDC mark registers Loosen the adjustable breaker arm fastening screws and turn the adjusting screw until the points just open The ignition can also be set by using the TDC marks if the spark lever is 1/3 retarded

President... 1930—Distributor point gap 020". Two breaker arms, a four-lobe cam and a rotor with two fingers are used, No 4 There are two high tension coil terminals on the distributor block The center terminal fires cylinders 1287 and the offset terminal fires cylinders 6534 Because of the double rotor the wiring order is different from the firing order, the wiring order being 13248675 With the spark lever in full advance position, crank the engine until the punch mark about 1' ahead of the 1&8 TDC mark registers with the pointer screw on the peep hole Loosen the distributor clamp screw and turn the housing until the stationary points just open Then crank the engine ¼ turn until the punch mark about 1" ahead of the 3&6 TDC mark registers with the pointer. Loosen the adjustable breaker arm plate screws and turn the adjusting screw until the adjustable set of points just opens To synchronize the points with a gauge, set the points and time the stationary sets as stated above With the rotor finger that fires No 1 cylinder under No 1 terminal and the stationary points just open clamp the gauge on the side of the distributor housing so that the edge of the rotor finger aligns with O on the gauge Crank the engine until the same edge of the rotor finger aligns with 90 on the gauge Loosen the adjustable breaker arm plate screws and turn the adjusting screw until the points just open The ignition can also be timed by using the dead center marks on the flywheel instead of the punch marks if the spark lever is 1/3 retarded

6... 1931—A breaker with a single lever is used, No 1 With the spark lever in full advance position, crank the engine until No 1 piston is coming up on its compression stroke and continue until the punch mark ½' ahead of the UDC 1 6 mark in the flywheel registers with the pointer on the peep hole in the right side of the flywheel housing Loosen the distributor clamp screw and set the housing so that the points just break

6... 1932, 1933, 1934—A single breaker distributor is used, No 1 The distributor has a vacuum spark advance modifier which retards the spark up to 6 degrees when the engine is suddenly accelerated There is also manual and centrifugal automatic advance Set the spark control lever in its full advance position Crank the engine until No 1 piston is coming up on its compression stroke and continue until the punch marks located ½" ahead of the UDC 1-6 mark on the flywheel registers with the pointer in the peep hole on the right side of the flywheel housing Loosen the distributor clamp screw and turn the housing until the points break

Dictator and Commander 8... 1932—Two breaker arms, a four-lobe cam and a single ignition coil are used, No 3 This distributor has a vacuum spark advance modifier which retards the spark up the 6 degrees when the engine is suddenly accelerated There is also manual and centrifugal automatic advance Set the spark control lever in full advance position and insert a ⅛' pin through the hole in the manual spark control arm and the slot in the secondary arm Crank the engine until No 1 piston is coming up on its compression stroke and continue until the punch mark ¾" ahead of the UDC 1-8 mark on the flywheel registers with the pointer in the peep hole in the right side of the flywheel housing Loosen the distributor clamp screw and turn the housing until the stationary points break Crank the engine a quarter turn until the punch mark ¾' ahead of the mark UDC 3-6 on the flywheel registers with the pointer on the peep hole At the point the adjustable points should break Remove the pin

President 8... 1932—The spark is timed the same as described for the Dictator and Commander 8 except that the punch marks are 1 inch ahead of the flywheel markings

Commander 8 and President 8... 1933, 1934—Two breaker arms, a four-lobe cam and a single ignition coil are used, No 3 The distributor has a vacuum spark advance modifier to momentarily retard the spark up to 6 degrees when the engine is suddenly accelerated Pushing in the spark control button advances the spark

With the spark control in its fully advanced position, crank the engine until No 1 piston is coming up on its compression stroke and the punch mark about ½" ahead of the mark UDC 1 8 on the flywheel registers with the pointer at the peep hole in the right side of the flywheel housing Loosen the control arm plate clamp screw and rotate the distributor until the stationary points just break Tighten the clamp screw and crank the engine a quarter turn until the punch mark about ½' ahead of the UDC 3-6 on the flywheel registers with the pointer at the peep hole In this position the adjustable points should just break

Speedway President 8... 1933—The ignition is timed the same as described for the Commander 8 and President 8 except that the marks UDC 1-8 and UDC 3-6 register with the pointer at the flywheel peep hole

TERRAPLANE

6—The timing instructions are the same as described for Hudson 8, the only difference being that the flywheel is marked UDC 1-6

VIKING

Distributor point gap 022" Two breaker arms and a four-lobe cam are used, No 3. Take the distributor off the car to set and synchronize the points After setting both sets of points to the correct gap, clip the timing gauge over the cam and lock it by pushing the slide through, showing the arrow that points in the direction of rotation Turn the lower end of the distributor shaft until the forward leg of the gauge is partially over the slot in the distributor housing and the stationary set of points just breaks Note the number that is directly over the edge of the slot and turn the shaft clockwise until the same number on the rear leg of the gauge registers with the same edge of the slot that was used before. This must be set accurately Loosen the adjustable breaker arm plate screws and turn the adjusting screw until the adjustable set of points just opens Before installing the distributor on the car check all adjustments again Install the distributor on the car, remove No 1 spark plug, right front cylinder, and insert a gauge With spark lever in full advance position, crank the engine until No 1 piston is coming up on its compression stroke and continue until it is 045' before TDC Loosen the distributor clamp screw and turn the housing until the stationary set of points just opens

WHIPPET

96A... 1930—Distributor point gap 018". A single breaker arm is used, No 1 With spark lever in full advance position, crank the engine until No 1 piston is coming up on its compression stroke and continue until the mark IG on the flywheel registers with the line on the peep hole, under the floor board Loosen the distributor clamp screw and turn the housing until the points just open

WILLYS

Six 98B... 1930—Distributor point gap 018" A single breaker arm is used, No 1 With spark lever in full advance position, crank the engine until No 1 piston is coming up on its compression stroke, and continue until the mark IG on the fly-

IGNITION TIMING . . .

wheel registers with the screw in the peep hole. Loosen the distributor clamp screw and turn the housing until the points just open.

8-80D . . . 1931—No. 3. With the spark control button all the way in, crank the engine until No. 1 piston is coming up on its compression stroke and continue until the line marked IGN on the flywheel registers with the pointed end of the inspection plate screw on the left side of the flywheel housing. This is 6 degrees or .0136" ahead of TDC measured in piston travel. Loosen the distributor clamp screw and set the housing so that the stationary points just break. Crank the engine a quarter turn until No. 6 piston is in the same position, that is .0136" before TDC and set the adjustable points so that they just break.

6-90 . . . 1932—A single breaker distributor is used, No. 1. Pushing in the spark control button on the dash advances the spark. Uncover the peep hole in the left front side of the flywheel housing. With the spark lever in full advance position crank the engine until No. 1 piston is coming up on its compression stroke and continue until the mark IGN on the flywheel registers with the pointed screw in the peep hole. This is top dead center of the stroke. Loosen the distributor clamp screw and turn the housing until the points just break.

77 . . . 1933, 1934—A single breaker distributor is used, No. 1. There is no manual spark control. Crank the engine until No. 1 piston is coming up on its compression stroke and the mark IGN on the flywheel registers with the pointed end of the screw at the peep hole in the left top side of the flywheel housing. Loosen the distributor clamp screw and turn the housing until the points just break. This is 4 degrees before top dead center measured on the flywheel or .0066 inch early on piston travel.

WILLYS-KNIGHT

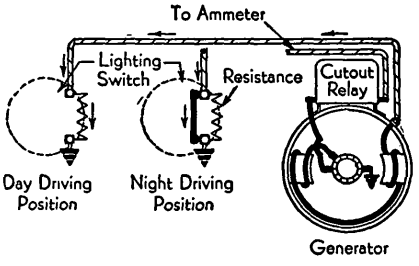
70B . . . 1930—Distributor gap .018". A single breaker arm is used. No. 1. With the spark lever in full advance position, crank the engine until No. 1 piston is coming up on its compression stroke and continue until the mark IGN on the flywheel registers with the pointer on the peep hole. This is .026" before TDC measured in piston travel. Loosen the distributor clamp screw and turn the housing until the points just open.

66D . . . 1931—A distributor with a single lever is used, No. 1. With the spark lever in full advance position, crank the engine until No. 1 piston is coming up on its compression stroke and continue until the line marked IGN on the flywheel registers with the pointed end of the inspection plate screw on the right side of the flywheel housing. This is 16 degrees or .112" before TDC measured in piston travel. Loosen the distributor clamp screw and set the housing so that the points just break.

95 . . . 1932—A single breaker distributor is used, No. 1. Pushing in the spark control button on the dash advances the spark. Uncover the peep hole in the left front side of the flywheel housing. With the spark lever in full advance position crank the engine until No. 1 piston is coming up on its compression stroke and continue until the mark IGN on the flywheel registers with the pointed end of the screw in the peep hole. This is .058" before TDC if measured in piston travel. Loosen the distributor clamp screw and turn the housing until the points break.

GENERATORS . . .

TWO types of Delco-Remy lamp load generators are being used. A third brush type which has a lighting switch controlled resistance is used on Chevrolet Master 6 and Oldsmobile 6 and 8 cars. A shunt wound, current control type is used on Cadillac cars. The current output of each of these generators is influenced by the lamp load connected to the terminal on the generator field frame.



SWITCH CONTROL RESISTANCE

Chevrolet Master 6 and Oldsmobile . . . 1934—The generator is a two-pole machine with its field winding brought out to an external insulated terminal in the generator frame rather than being grounded within the machine. The terminal is then connected to the headlight switch. When the lighting switch is in its "off" or "park" position, the ground is through a resistance in the headlight switch. When the headlamps are turned on, the resistance is cut out by a direct ground at the switch. This allows a higher output to be taken from the generator when driving at night and affords protection to the battery from overcharging when extensive daylight driving is done.

The generator output is adjusted by shifting the third brush. Moving it in the direction of the armature rotation increases the output and moving it in the opposite direction decreases the output. In making adjustments for generator output the reading should be taken at the generator because of the resistance in the lighting switch.

Below is the maximum safe third brush setting:

	Amperes	Volts	R.P.M.
Cold output	16-19	8.0-8.4	2600
Hot output	13-15	7.7-8.0	3000

A one-ohm resistance is standard equipment on the switches and is suitable for average driving. An excessive amount of any one particular type of driving will warrant changing to another size resistance. Without disturbing the adjustment of the third brush, the generator output for day driving can be increased by decreasing the resistance on the switch, likewise, the output can be decreased by increasing the resistance. When the night driving is greater than the day operation and the charging rate will not permit the battery to meet the requirements of the load, a ½ or ¾ ohm resistance can replace the one-ohm resistance. If excessive day operation results in overcharged battery condition, a 1½ ohm resistance will reduce the charging rate.

All connections in the field circuit must be tight. If the generator does not charge when the lights are off but charges when the lights are on, it indicates that the resistance unit is open circuited and should be replaced. Any open circuits or loose connections between the generator and the switch should be remedied.

CURRENT REGULATED SHUNT TYPE

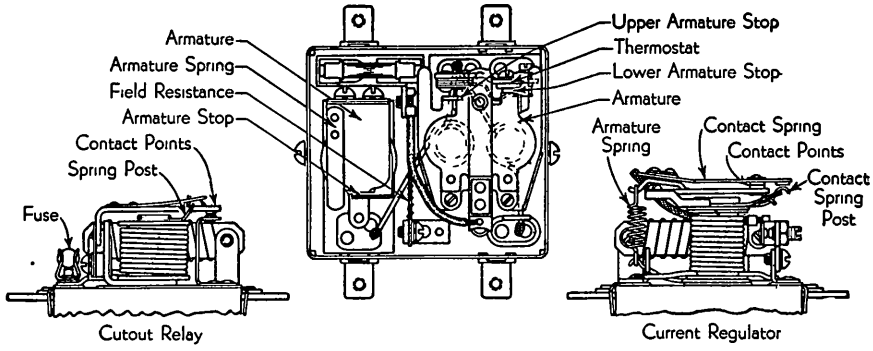
Cadillac . . . 1934—The current regulated lamp load type of generator used on Cadillac cars has a shunt field and a ventilating feature for reducing the operating temperature of the generator. The conventional cutout relay, the current regulator, the field fuse and the thermostat circuit breaker for the headlamps are mounted together in a control box on top of the generator.

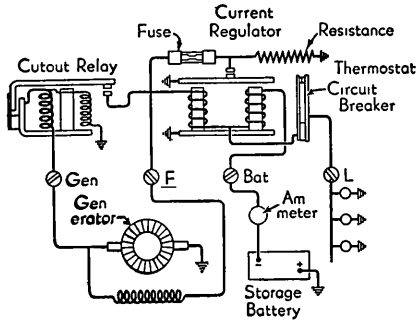
The current regulator replaces the third brush and therefore only the two main brushes are necessary. The current regulator unit has two coils. When the lights are off the current is regulated at the value specified for the generator. With the lights turned on, the generator current output is increased 50 per cent of the allowable lamp load. The allowable lamp load of these cars is 11 and it should not be exceeded or the generator will be overloaded. If the generator is charging at 15 amperes and the generator is connected to an 11 ampere lamp load, the increase in output will be 5.5 amperes, giving the generator a total output of 20.5 amperes. This output is constant throughout the speed ranges of the car.

The maximum output of the generator without a lamp load is as follows:

	Amperes	Volts	R.P.M.
Cold	13-16	7.7-8.1	1200
Hot	9-11	7.3-7.55	1200

Increasing the spring tension on the current regulator armature increases the current output and decreasing the spring tension decreases the current output. Since the current regulator gives constant output, the specified setting may be too high in some cases of excessive driving and the rate of charge should be reduced





to prevent overcharging which results in high voltage

The current regulator consists of two coils that form an electromagnet When the cores of these coils are sufficiently energized the armature is pulled down against spring tension, opening the contacts, and the shunt field current is diverted through a resistance to the ground This resistance greatly decreases the field current and the output current flowing through the magnet coils will likewise be decreased to such a point that the spring tension overcomes the magnetic pull on the armature and closes the contacts This operation is repeated many times per second so that the regulator will operate for a reasonably constant current which depends upon the spring tension applied to the armature

The current flowing to the battery also flows through both coils, each of which has 21 5 turns This regulator is adjusted for 10 amperes with the lights off and the spring tension is therefore adjusted to equal the magnetic pull of both coils which is 10 x 21 5 or 430 ampere turns If an 11 ampere light load is now turned on, this 11 ampere current only flows through one coil and therefore creates a pull of 11 x 21 5 or 236 5 ampere turns Since it requires 430 ampere turns to operate the regulator, the difference between 430 and 236 5 or 193 5 ampere turns must be furnished by the current flowing to the battery Since this current flows through both coils, 43 turns, we divide the needed 193 5 ampere turns by 43 which gives 4 5 amperes to the battery This gives 11 amperes to the lights, plus the 4 5 amperes to the battery or a total generator output of 15 5 amperes This represents an increase of 5 5 amperes by turning on the lights, an increase of one half the lamp load

This current regulator regulates for the same current at all times, but it is advisable to increase the cold output to take care of cars which are being driven only a short time each day and to decrease the hot output to prevent overheating the generator and overcharging the battery on cars more continuously in service

This variation is provided for by a bimetal armature hinge which when heated furnishes a force opposing spring tension and causes the regulator to operate at a lower current when hot The amount of this difference depends upon the relation between the force furnished by this hinge and the spring tension A spring tension is used to balance the armature pull at 10 amperes without lights, but this spring tension will vary according to the air gap between the armature and the pole cores If the gap is too small the vibration frequency of the regulator will be low, while if it is too great the force will be too small to properly operate the armature

The thermostat is in series with the lighting circuit through two silver contacts held closed at ordinary temperatures by the spring pressure in the metal The current flowing through the contact blade generates heat and it is designed and adjusted to open the points at 375 to 385 degrees No current will then flow, the blade will rapidly cool permitting the contacts to close again The current will therefore be limited, should a short occur in the lighting circuit

Adjustment—Adjust the stop which hits the fibre bumper, with the bumper barely touching the stop, to give an air gap between the center of the core and the armature of 063" to 070' Then adjust the stop governing the upward travel of the armature, so that with the armature in its up position there is 005" to 008" clearance between the bumper and the stop The stop governing the down position should be adjusted so that the point opening when the armature is down is .015" to 025"

The unit should then be connected to a generator and battery and an 11 ampere light load turned on The armature spring should next be adjusted so that the generator output at approximately 3000 r p m is 14 5 to 15 5 with a hot generator or 19 to 21 amperes with a cold one With the light off, this will give 9 5 amperes

The cutout relay is of standard construction and operation With its armature down, adjust the air gap at the core to 012" to 017' and the contact opening with the armature up to 015" to 025" Then adjust the spring tension so that the relay closes at 6 75 to 7 25 volts

The cover should be in place when the voltage and current readings are taken

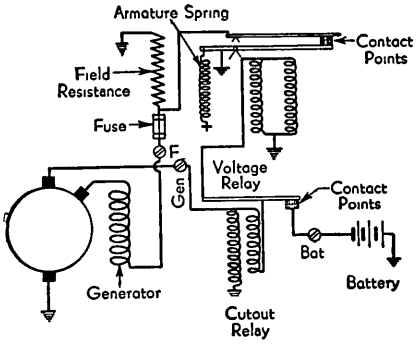
VOLTAGE CONTROL RELAY

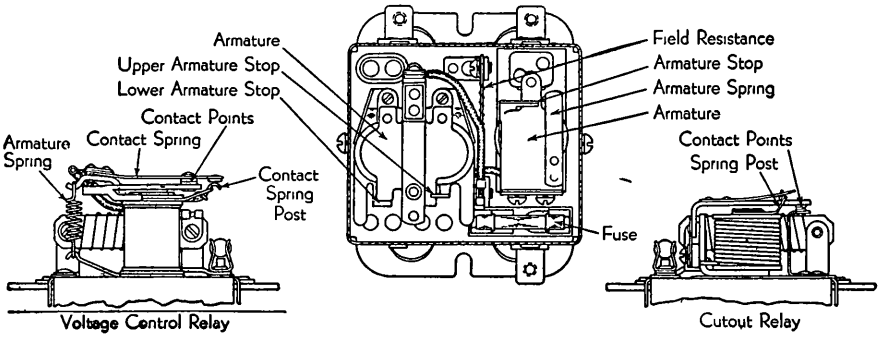
Chrysler, De Soto, Dodge and Plymouth De Luxe ... 1934—A cutout relay and voltage control relay are mounted on the generator The cutout relay is of standard construction and operation With its armature down, adjust the air gap at the core to 012' to 017" and the contact opening with the armature up to 015" Then adjust the spring tension so that the relay closes at 6 75 to 7 25 volts

When the generator first starts charging, the voltage control relay points are closed When the battery becomes fully charged and the generator terminal voltage reaches a predetermined high value, the contact points open, thereby automatically inserting into the field circuit a resistance which decreases the generator charging rate. When the voltage has decreased to a predetermined low value, the contact points close and the generator will again supply more energy to the battery This unit prevents the generator charging rate from becoming abnormally high after the battery has reached a fully charged condition.

Adjustments—Remove the box which houses the relay units from the generator and check it on a test bench Hold the armature down against the lower armature stop and set the air gap at 038" The adjustment is made by bending the lower armature stop Spring tension measured at the contacts should be approximately ¾ ounce Release the armature and gauge the gap between the armature and the lower armature stop It should be 028". This travel is obtained by bending the upper armature stop backward or forward With the armature in the extreme downward position, the contact point opening should be 008" to 013" This adjustment is made by bending the upper contact spring stop Reinstall the unit on the generator.

Connect an accurate reading voltmeter at the terminal marked "BAT" and to the ground Run the generator until the





apparatus box has reached a very warm temperature The control relay points should open at 8 3 volts Increase or decrease the opening voltage by increasing or decreasing the armature spring tension respectively The control relay points should close at 7 2 volts The closing voltage is increased by increasing the armature air gap and decreased by decreasing the air gap It is only necessary to bend the lower armature stop slightly to obtain closing voltage adjustment When checking the opening and closing voltages, cycle the regulator before arriving at the true reading To cycle the regulator, increase the speed of the generator until the voltage is reached at which the points just open Then decrease the speed of the generator until the points just close After making this cycle, obtain true readings at the very instant the points open and close The cover must be in place when checking the readings Do not overrun the voltages reached at each point Insert a small resistance into the charging circuit if the voltages cannot be reached

If the air gap is altered considerably to obtain the correct closing voltage, it will probably be necessary to bend the upper armature stop to allow for any large change If this adjustment is changed, the contact point opening should again be checked within the limits of 008' to 013".

The control unit is over-compensated for temperature change and therefore the hot opening and closing voltages will be lower than the cold opening and closing voltages

Even with a fully charged battery it may be difficult to obtain a voltage setting within the specified limits unless a small resistance is connected in the charging circuit A variable resistance unit, of sufficient current carrying capacity to make it possible to obtain approximately 25 ohms resistance, can be used to increase the voltage The lowest possible resistance to obtain voltage should be used to prevent vibrating of the contacts Remove the resistance after the voltage setting has been obtained

AUTOMATIC STARTERS . . .

SEVERAL devices are used as standard equipment to make starting easy and in some cases to consist of merely turning on the ignition switch The Bendix Startix is used on some cars and others use the Delco-Remy solenoid switch, magnetic switch or vacuum unit, either separately or in a combination The devices in the latter group can be classified as followed Starterator, Magnetic, Solenoid, Semi-automatic, and Coincidental

While in many cases their adjustment is very simple, still they may affect or be affected by other units on the car so that their operation as well as their adjustment should be thoroughly understood.

STARTIX

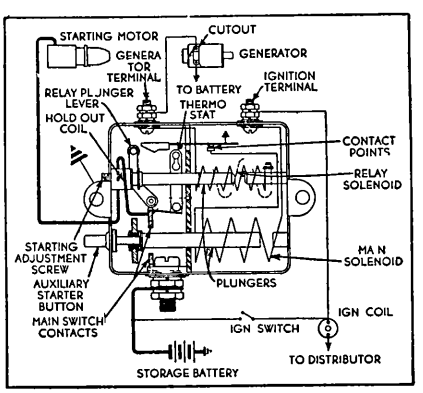
Auburn, Franklin 6, Hudson, Lincoln, Packard, Pierce-Arrow, Rockne, Studebaker . . . 1933—The Startix is an electrical switch that permits the starting motor to crank the engine by merely turning on the ignition switch If the engine stalls at any time while the ignition is on it is automatically cranked

Inside the Startix are two solenoids, main and relay, with movable plungers The main solenoid has one set of windings Current for this circuit enters at the ignition terminal on top of the Startix and is completed through a set of tungsten points One of these points is stationary while the other is on a vibrating arm which is grounded The relay solenoid has two sets of windings, one connected in the starting motor circuit and the other in the generator circuit Both circuits have a common ground but receive their current from different sources and are active at different periods

When the ignition switch is turned on, current from the battery flows to the ignition terminal, through the main solenoid and through the contact points to the ground This energizes the main solenoid, causing the plunger to be pulled into it This closes the main switch contacts and completes the circuit from the battery to the starting motor, cranking the engine

While this is occurring, current drawn by the starting motor passes through the hold-out coil—a large, one half series coil —which magnetizes the outer end of the relay solenoid plunger, thus holding it while the engine is being cranked At the same time, current enters the starter winding of the relay solenoid through a wire which is connected to the hold-out coil at the main switch contact Current only flows through this wire when the main switch contacts are closed Current passing through this winding has a tendency to draw the relayed solenoid plunger in, but the attraction of the hold-out coil is stronger, and therefore, holds the plunger out while the engine is being cranked The pull from the current in the starter winding is adequate to draw the plunger in, provided the current through the hold-out coil is small, after the Bendix is demeshed and the starting motor is running under no load

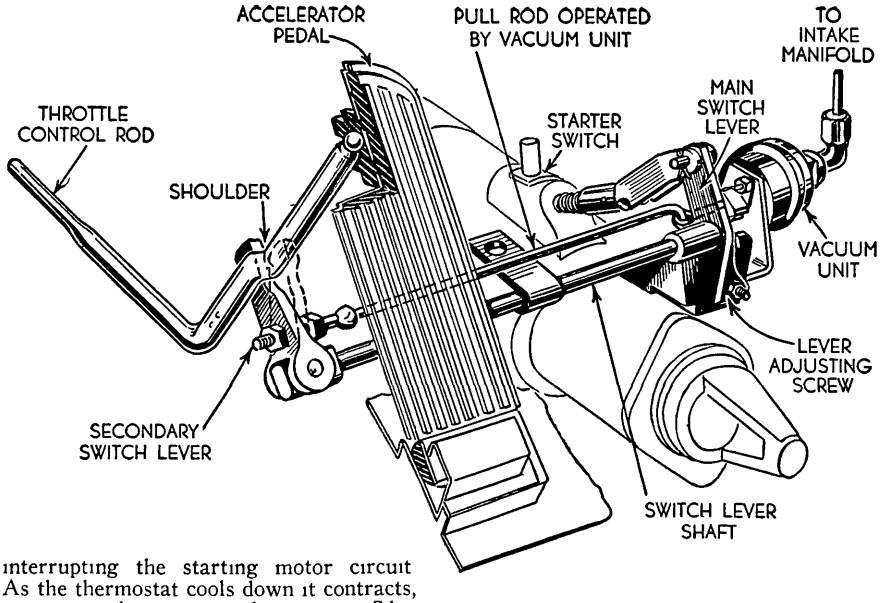
When the relay solenoid plunger is pulled in, it draws in the relay plunger lever which trips open the contact points and breaks the main switch circuit This releases the main solenoid plunger, opening the main switch contacts and breaking the circuit from the battery to the starting motor As soon as the starting motor circuit is opened, the Bendix gear is automatically disengaged from the flywheel



When the engine fires, current supplied by the generator enters the generator terminal on top of the Startix, energizing the generator windings in the relay solenoid sufficiently to hold the plunger The starter and generator windings of the relay solenoid are so arranged that they assist each other and because of this, the generator winding aids the starter winding to overcome the effect of the hold-out coil

As long as the engine is running and current is being supplied by the generator, the relay plunger lever holds the contact points open so that no current can flow to the starting motor However, if the engine stops or is stalled while the ignition is on, the generator winding of the relay solenoid becomes inactive, releasing its plunger, which withdraws the plunger lever from the vibrator arm When the lever is withdrawn, the arm vibrates for 1 to 1⅓ seconds before it comes to rest, closing the points and completing the circuit through the main solenoid The arm is adjusted to vibrate for this length of time to permit the starting motor and engine to come to a complete rest before cranking again This adjustment is set and sealed at the factory and should not be changed

If the starting motor stalls under a cranking load and the ignition should be left on, a thermostat automatically opens the starting motor circuit momentarily every thirty to sixty seconds The thermostat is connected to one of the main switch contacts When the contacts remain closed under a stalled starting motor load, the abnormally heavy battery current flowing through the contacts results in their becoming hot This heat expands the thermostat and causes a fibre arm at the end of it to open the contact points,



interrupting the starting motor circuit As the thermostat cools down it contracts, permitting the points to close again This continues, without damage to the unit, until the ignition switch is turned off This opening and closing of the points makes a distinctive clicking noise to warn the operator

There is an auxiliary starter button on the side of the unit for cranking when the ignition is turned off or cranking the engine when setting tappets or making other adjustments If the Startix should fail to operate when the ignition is turned on starting can be accomplished by using this button When using this button, press it hard until solidly bottomed and then release it quickly Should the starting motor continue to spin after releasing the button, press it hard again and release quickly

Satisfactory performance depends largely upon the adjustment of the starter adjustment screw and at times an adjustment may be necessary A non magnetic wrench and screw driver should be used for this adjustment but if they are not on hand, and ordinary steel ones are used they must be removed from the unit before the adjustment can be tested When prolonged spinning of the starting motor occurs, it indicates that the starter adjustment screw is in too far Interrupted cranking or repeated attempts to crank at broken intervals indicate that the screw is too far out Total movement of the screw between these two range limits is about half a turn and therefore the adjustment is delicate and must be made accurately

As the Startix is connected to the starting motor, generator relay and battery, it is important that these units are in good condition and functioning properly Before removing the Startix, inspect the units and make sure that all connections are tight, clean, and correctly made

If the Startix is removed from the car, a quick test of the various circuits can be made for shorts, grounds or open circuits without removing the cover Connect a lead from a battery to one of the mounting ears for a ground Connect another lead from the battery to the battery terminal of the Startix Now connect a jumper between the battery and the ignition terminals This energizes both solenoids and the complete cycle of operation should occur The cycle of the main switch circuit is readily identified by the clicking noise already described To check the generator circuit of the relay solenoid connect another jumper between the battery and generator terminals This should cause the cycle of operation to stop If it does not perform in this manner, the unit should be replaced

The amperage draw of the circuits is as follows Main solenoid, 1 ampere, starter winding in relay solenoid, 2½ to 3 amperes, and generator winding in relay solenoid, 4 to 5 amperes

If the generator fails to charge while the car is being driven, there will be a periodical clicking sound resulting from the Bendix gear striking against the flywheel gear To prevent this trouble, until the generator can be repaired, remove the small wire at the ignition terminal on the Startix and tape the loose end A similar sound may also be heard if the idling speed is too low

With a low battery and certain starting motor conditions the relay plunger may not pull it at the time of engine firing and generator charging This results in a prolonged spinning of the starting motor By speeding up the engine the resultant higher charging rate of the generator will pull in the relay plunger and stop the starting motor from spinning

If the battery reaches the point where it will not crank the engine and the car is started by towing or pushing it is advisable to disconnect the small wire at the ignition terminal and tape it This permits the ignition to be turned on but makes the Startix inoperative so that the Bendix gear cannot be screwed into mesh with the flywheel to remain stalled there under the dead battery condition and lower the ignition voltage

STARTERATOR

Chevrolet .. 1933—With the Starterator, the operation of the starting motor and the throttle is controlled by the accelerator pedal There is an offset in the throttle control rod a short distance from the accelerator pedal When the engine is stopped and the accelerator pedal is depressed for starting, the shoulder formed by the offset depresses the secondary switch lever This action depresses the starting switch button through the main switch lever on the opposite end of the switch lever shaft The secondary switch lever is also acted upon by a vacuum unit

In the vacuum unit is a diaphragm which is acted upon by vacuum in the intake manifold on one side and is connected to the secondary switch lever by means of a small rod on the other side On the vacuum side of the diaphragm is a coil spring that is compressed when the vacuum from the intake manifold acts on the diaphragm As soon as the engine fires, the high vacuum in the intake manifold acts on the diaphragm, causing it to move the secondary switch lever sideways, toward the vacuum unit, until it clears the offset in the throttle control rod As the lever clears the offset, pressure is released from the secondary switch lever and the spring at the starting motor switch returns the levers to their normal position This breaks the starting motor to battery circuit, stopping the starting motor As long as the engine is running its vacuum holds the secondary switch lever in this position so that the accelerator pedal only operates the throttle When the engine stops and the accelerator pedal is released the vacuum in the intake manifold diminishes and the coil spring on the vacuum side of the diaphragm returns the secondary switch lever into engagement with the offset on the throttle control rod While the engine is running, the vacuum in the manifold causes a deflection of the diaphragm that is usually sufficient to hold the secondary switch lever away from the throttle control rod At high engine speeds or at wide open throttle positions, the vacuum decreases to a minimum but since the secondary switch lever can only engage the offset in the throttle control rod after the accelerator is released, it is not possible for the starting motor to be operated

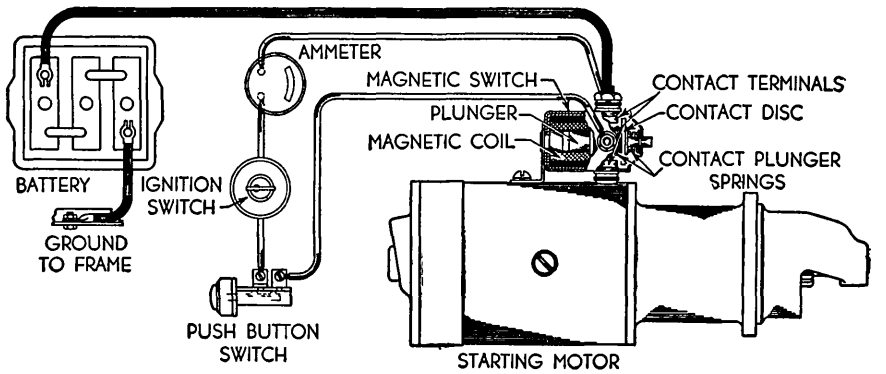
There are four adjustments for the switch levers First, the main switch lever must clear the floorboard by ⅛ inch Chevrolet has a special gauge for checking this adjustment and also an adjusting spring for making the fourth adjustment Remove the toe boards and place the special gauge into the toe board anchor nut holes Loosen the lever adjusting screw nut and turn the adjusting screw until the lever just touches the gauge Second, the secondary switch lever must be at right angles to its cross shaft Loosen the nut at the end of the rod leading to the vacuum unit at the secondary switch lever and turn the screw until the lever is positioned correctly Third, there must be ⅛ inch clearance between the face of the secondary switch lever and the shoulder on the throttle control rod Disassemble the throttle rod from the bell crank at the side of the engine Loosen the yoke end check nut and adjust the control rod to a length that will give the correct clearance This must be done with the bell crank in its idle position Fourth, there must be 5/16 inch clearance between the starter switch button and the starter link If the distance is too great snap the special adjusting spring on the link and adjust it until the clearance is correct

MAGNETIC

Pontiac ... 1933—The magnetic starting switch is mounted on the starting motor and is used with starting motors equipped with a Bendix drive It is controlled by a push button switch on the dash The starting motor cannot be operated until the ignition switch is closed

Upon initial closing of the circuit at the dash push button, approximately 15 amperes battery current energizes the magnetic coil and the plunger is drawn into it The contact disc, mounted on the plunger, is therefore pulled toward the contact terminals until the circuit between the starting motor and the battery is completed At the moment the circuit is completed, the major portion of the magnetic coil is short circuited and only a small portion, approximately 2 amperes, of the circuit is required to retain contact with the terminals, thereby releasing practically all the battery current to drive the start-

AUTOMATIC STARTERS...



ing motor Springs on each side of the contact disc eliminate the possibility of poor connection through the switch As the plunger bottoms, the spring on the terminal side of the contact disc is compressed The amount of movement of the plunger after the contacts are closed is the amount that the plunger spring on the opposite side of the contact disc is compressed

The dash push button should be released as soon as the engine fires for the starting motor will continue to run as long as the button is depressed even though the engine is running

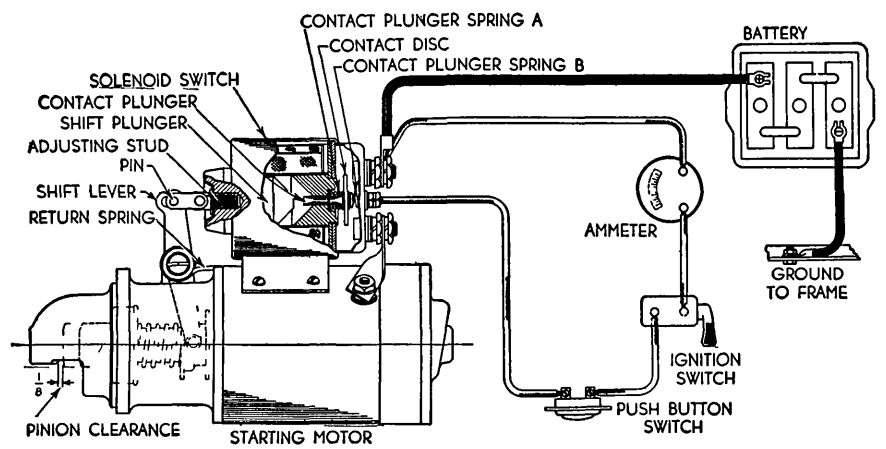
SOLENOID

Buick, Franklin 12...1933—The solenoid starting switch is mounted on the starting motor and is used with the overrunning clutch type of starting motor with a manual shift for the pinion It is controlled by a push button switch on the dash The starting motor cannot be operated until the ignition switch is closed

Inside the switch is a heavy shift plunger which is connected by linkage to the starting motor pinion At the forward end of the switch are three terminals The two larger ones are connected in the starting motor and battery circuit The smaller terminal is connected to the push button switch As soon as the ignition switch is closed, and the push button switch is depressed, current flows to the solenoid switch This current energizes the field which pulls the shift plunger forward, meshing the starting motor pinion with the flywheel gear After the shift plunger has moved the required distance for the shift lever to mesh the pinion with the flywheel, the pointed end of the shift plunger touches the end of the contact plunger Further movement of the plunger causes the contact disc, mounted on the contact plunger, to complete the circuit between the starting motor and the battery, permitting the starting motor to crank the engine A spring on either side of the contact disc eliminates the possibility of a poor connection through the switch As the shift plunger bottoms, the contact plunger spring B is compressed The movement of the contact plunger after the contacts are closed is the amount that the contact plunger spring A is compressed As soon as the push button switch is opened, spring B quickly moves the contact disc away from the terminals and instant neutralization of the magnetic field in the switch permits the return spring on the starting motor shift lever to remove the pinion from the flywheel It is important to release the push button switch as soon as the engine fires to eliminate the possibility of the overrunning clutch seizing

If the starting motor stalls when cranking the engine, due to a weak battery, the pressure between the pinion teeth and the flywheel teeth is sufficient to hold the pinion in mesh As soon as the push button switch is opened, the contact plunger spring B moves the contact disc away from the contact terminals as already described A slot in the end of the pinion shift lever permits the shift plunger to be moved this distance by the pressure of contact plunger spring B As soon as the starting motor to battery circuit is opened, the pressure between the pinion and the flywheel teeth is relieved and the shift lever return spring will demesh the starting motor pinion from the flywheel

It is essential that the relation between the overrunning clutch drive and the solenoid switch be maintained within certain limits With the shift plunger bottomed there should be ⅛ inch clearance between the end of the pinion and the starting motor housing This clearance can only be adjusted accurately after the starting motor is removed from the car This operation can be accomplished by using the battery current to hold the plunger in the bottom position while adjusting the plunger stud linkage Open the circuit between the starting motor and the solenoid switch so that the pinion will not spin Close the circuit to the push button switch terminal on the solenoid switch. Push the shift plunger into its bottom position by hand The battery will then hold the plunger in the correct position for making the pinion clearance adjustment Remove the pin from the slotted hole in the pinion shift lever Take the lash out of the overrunning clutch by pressing on the clutch shell Adjust the stud so that the pin may be inserted at the forward end of the slot with the pinion ⅛ inch from the housing



SEMI-AUTOMATIC

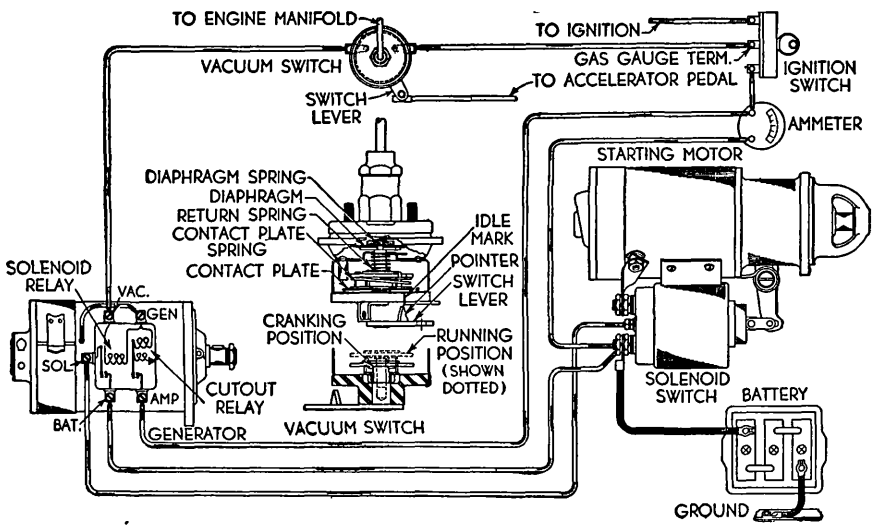
Chrysler, Dodge 8...1933—The semi-automatic starting equipment consists of the solenoid switch, described above, a vacuum control switch and a relay The solenoid switch is controlled by the relay which is mounted on the generator and the vacuum switch which is mounted near the intake manifold This combination gives protection against the starting motor cranking while the engine is operating If the generator is shorted or the belt broken, the starting motor is controlled by vacuum If the vacuum unit is not operating properly, due to leaks, the starting motor is protected by the relay These control units are connected in the ignition circuit and therefore cannot be operated while the ignition is off

The vacuum switch is operated both manually and by vacuum The switch lever is linked to the accelerator pedal and rotates the contact plate, making and breaking contact while the switch diaphragm, controlled by the vacuum in the intake manifold, moves the contact plate along the switch shaft toward and away from the contact surface When the ignition switch is turned on, current is allowed to flow to the vacuum switch Depressing the accelerator pedal rotates the contact plate, closing the circuit through the vacuum switch and opening the throttle As soon as the engine fires, the high vacuum in the intake manifold, acting on the diaphragm, pulls the contact plate along the switch shaft, away from the contact surface and latches it in the open circuit position, allowing the starting motor to stop After this, the throttle can be moved to its wide open position, when the manifold vacuum is low, without allowing the contact plate to return to the contact surface

When the engine stalls or the ignition switch is turned off, the contact plate is unlatched and moves back to the contact surface

If the engine stalls while free wheeling, with the accelerator pedal in closed throttle position, the contact plate is unlatched and allowed to move back to the contact surface When the accelerator pedal is depressed again, the circuit through the vacuum switch will again be completed for cranking the engine In case the engine is stopped for any reason, it is necessary to allow the accelerator pedal to return to the idle position to engage the vacuum switch contacts Should the starting motor stall when cranking the engine, it is only necessary to release the accelerator pedal The pinion will be removed from mesh with the flywheel gear by the action of the solenoid switch

After the current passes through the



ignition switch and vacuum switch it goes on to the relay. Here it goes through the relay winding to the ground connection in the generator, energizing the coil in the relay which closes the relay contact points. Closing the contact points completes the circuit between the battery and the solenoid remote control terminal. The contact points in the relay will remain closed while cranking. When the engine is running, the generator builds up a voltage which opposes the battery voltage applied to the relay through the vacuum switch and as soon as the difference between the generator voltage and battery is 2.0 volts or less, the relay contact points open, breaking the circuit.

After current is allowed to reach the solenoid switch, due to the action of the vacuum switch and relay, its operation is the same as described for this switch when it is a separate installation. The relation between the solenoid switch and the overrunning clutch should also be the same.

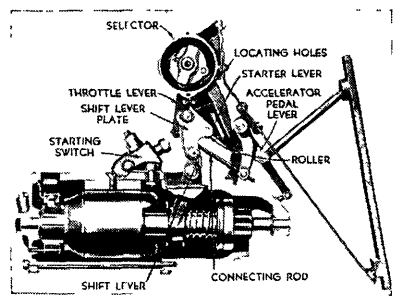
The vacuum switch lever is provided with a pointer which will assist in obtaining proper relation between the switch and the throttle. On the rim on the switch back is a white, idle mark. The lever should be located so that the pointer registers with the idle mark when the carburetor stop is in the idle position. This adjustment is made on the throttle arm shaft which is linked to the vacuum switch. Loosen the clamp screw and rotate the arm on the throttle shaft until the marks register.

The contact point opening of the relay should be .050 to .055 inches. With the contact points closed, the air gap between the armature and the core should be .007 to .009 inches. The contact points close at 4.3 to 4.7 volts and open at 2 volts or less.

COINCIDENTAL

De Soto... 1933—The coincidental starter control consists essentially of a selector unit with three levers extending from it. The selector unit can be termed a two-way clutch, actuated in one direction by a spring and in the other direction by a diaphragm, controlled by the vacuum in the intake manifold. One of the levers from the selector unit is linked to the accelerator pedal, another connects to the throttle cross shaft and the third actuates the starter shift mechanism and starter switch.

When the engine is not running and the accelerator pedal is released, the clutch mechanism in the selector unit is in such a position that the accelerator pedal lever



engages the starter lever. As the accelerator pedal lever is depressed, it travels down part way without moving the throttle lever. This lever is picked up, however, at a point in the travel on the accelerator pedal lever so that when the accelerator pedal reaches the position where the starting motor pinion is fully engaged with the flywheel gear and the starter switch is closed, the throttle will be one-third open. As soon as the engine fires the intake manifold vacuum acts on the selector unit diaphragm, pulling the clutch mechanism in the opposite direction which disengages the starting motor switch. However, because of the friction in the selector clutch and the spline shaft, the diaphragm will not actually do this unless the accelerator pedal is momentarily released. When the accelerator pedal is relased, the clutch which actuates the starter lever is released and then held out of engagement as long as there is vacuum in the intake manifold. The accelerator pedal then controls only the throttle. When the accelerator pedal is released, with the engine running, it will not come all the way up to the starting position because the clutch mechanism in the selector unit locks the accelerator pedal to the throttle lever so that it can only come back to a point corresponding to idle position of the throttle lever. However, if the engine is stopped, so that there is no vacuum intake manifold vacuum to act on the diaphragm, the spring in the selector unit which actuates the diaphragm in the opposite direction causes the clutch to release the accelerator pedal lever from the throttle lever, allowing the accelerator pedal to come all the way up to the starting position. The clutch mechanism is so designed that the accelerator pedal must come back to a point above the position it occupies when the engine is idling before it is possible to engage the starter lever again. Should the engine stall, the accelerator pedal must be released to permit the accelerator pedal lever to return to the position where it can engage the starter lever again.

After the throttle rods and automatic clutch controls have been adjusted, the shift lever plate on the starting motor gear shift lever should be adjusted so that its roller will contact the center of the pad on the end of the starter lever. Clearance between the roller and pedal should be 1/8 inch. The position of the plate can be adjusted after loosening the bolts holding the plate.

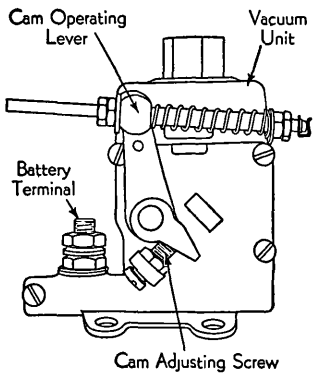
Then adjust the throttle rods and selector. This is accomplished by removing the cotter pin from the connecting rod between the throttle control cross shaft and the throttle lever. The accelerator lever and throttle lever should then be positioned so that the locating holes in these levers coincide. This can best be accomplished by inserting a 3/16 inch drill through the two holes. The connecting should should then be adjusted so that it slips into its hole in the throttle lever without disturbing the alignment of the rods or levers. The drill should then be removed from the locating holes and the adjustment inspected for proper alignment. This is accomplished as follows: With the ignition switch turned off, depress the accelerator pedal. While cranking the engine, measure the clearance between the end of the idle mixture adjustment screw and the stop on the carburetor. For one-third throttle, this clearance should be 5/16 inch. The ignition switch should next be turned on and the engine started. Then with the accelerator depressed, the ignition should be turned off and the accelerator depressed its full travel. Inspection should then be made to make certain that the throttle lever on the carburetor is in the wide open position and that the clearance between the accelerator pedal and the floorboards is sufficient to eliminate interference at this point. If the throttle opening at the time of cranking exceeds one-third, lengthen the connecting rod until corrected. If the throttle opening is less than one-third, shorten the connecting rod until corrected.

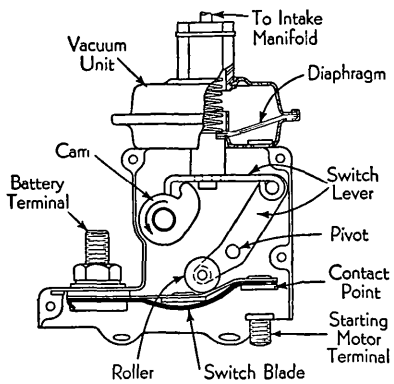
COINCIDENTAL

Nash... 1934—The Autolite coincidental starter switch used on Nash cars is interconnected with the clutch pedal and the intake manifold. When the clutch pedal is depressed, with the engine stopped, the switch cam is turned counterclockwise. This pulls the horizontal switch lever to the left and the vertical switch lever forces the switch blade down until its contact point makes contact with the starting motor terminal. With the engine at rest, the diaphragm in the vacuum unit which is attached to the horizontal switch lever is in its lowest position. As soon as the engine fires, suction from the intake manifold raises the diaphragm. This lifts the horizontal switch lever, breaking the contact at the starting motor terminal. The cam can then rotate as long as the engine is running without touching the horizontal switch lever. As soon as the engine stops, the vacuum unit diaphragm and the horizontal switch arm drop, ready to make contact again.

On the Nash 1280 and 1290, the starting motor and switch are mounted on the right side of the engine and the switch cam is operated by a cable attached to a lever on the clutch shaft. On the Nash 1220, the starting motor and switch are mounted on the left side of the engine and the switch cam is operated by a rod attached to the clutch pedal. This rod should be examined after every clutch adjustment.

The starter switch should engage just after the clutch pedal has been depressed





enough to completely release the clutch. This can be determined by placing the car in gear and depressing the clutch pedal very slowly. The length of the cable or rod can then be adjusted to give this result. The cam lever on the outside of the switch should have ⅛ inch movement, measured at the stop screw. This can be adjusted by turning the stop screw.

VACUUM CONTROL

Buick, Pontiac... 1934—The vacuum control switch used on 1933 Chrysler and Dodge 8 cars is used in the starting motor circuit of Buick and Pontiac cars in addition to the solenoid and magnetic switches that were used on these cars last year. The solenoid switch on Buick cars is also equipped with a relay control.

This permits the starting motor to crank the engine by depressing the accelerator pedal. After the engine fires, the vacuum switch breaks the circuit so that the accelerator pedal can be operated as long as the engine is running without closing the circuit through the vacuum switch.

Buick—To make an adjustment on Buick cars, *start the engine. If the switch has* been disconnected or is badly out of time, so that the engine will not start, disconnect the switch rod trunnion from the switch lever. Operate the switch by hand, by first raising the switch lever as far as it will travel to engage the vacuum switch clutch, and then pulling it down until contact is made. The throttle should be partly open during this operation.

Warm up the engine until the thermometer on the dash shows 140 degrees. Adjust the engine idling speed to 8 miles per hour by turning the idle adjusting screw on the carburetor. In making this adjustment, the cold idle control cam will be in the approximate position to that shown in the illustration. The throttle rod should be screwed up against or as close as possible to the trunnion on the carburetor throttle valve shaft.

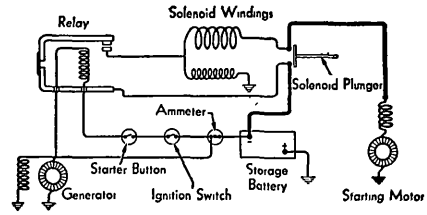
After the engine idle has been adjusted, the distance from the top of the accelerator pedal to the floor mat should be checked. This distance should be as follows: Buick 50—4⅛ inches, Buick 60—4⅜ inches, Buick 90—4⅝ inches. This can be adjusted by changing the length of the accelerator pedal rod.

Rotate the cold idle control cam clockwise until it strikes the stop on the carburetor. Leave the cam in this position until the switch has been adjusted. Remove the trunnion from the switch lever and turn the lever until the line on it is exactly opposite the line marked "fast idle" on the switch housing. Adjust the length of the switch rod by turning its trunnion until the trunnion is directly opposite the hole in the switch lever. Check the alignment after the trunnion has been replaced for this adjustment must be accurate.

Turn on the ignition switch and rotate the cold idle control cam until it strikes the stop on the carburetor. Hold the control cam in this position with one hand and slowly push down on the lever to which the accelerator pedal rod is attached until the switch just makes contact, operating the starter. The point of the idle adjustment screw should clear the control cam, in this position, by at least 3/32 inch. This is to make certain that the throttle is always open when the starter is cranking the engine.

Pontiac—Adjust the length of the throttle rod so that the accelerator pedal is just touching the floor when the carburetor throttle valve is in its wide open position.

Release the accelerator pedal and with the carburetor throttle valve closed, set the adjusting screw in the throttle rod lever to give .235" to .265" clearance between it and the carburetor rod lever. Adjust the switch rod so that the line on *the switch lever registers with the line on* the switch body. With the hand throttle fully closed, adjust the cable from the throttle button to give 1/32 inch clearance between the lever and the carburetor rod lever. This clearance must be maintained after the hand throttle has been pulled all the way out and pushed in again.

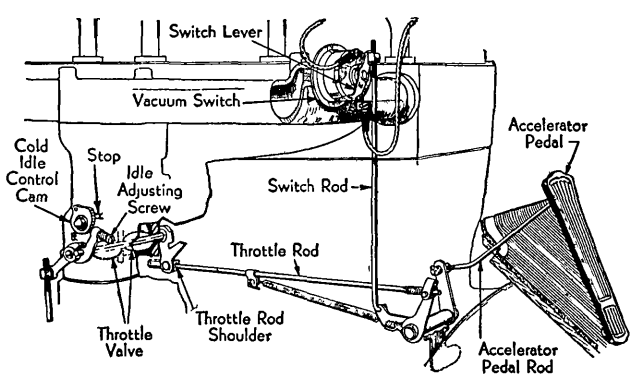


RELAY CONTROL

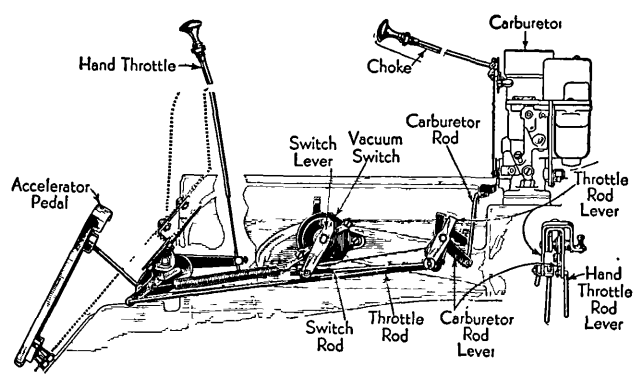
Cadillac, Oldsmobile, Buick... 1934—The controls for the starting motor on Cadillac, Oldsmobile and Buick cars include a solenoid switch, on top of the starting motor, a relay and a starter button on dash. To start the car it is only necessary to turn on the ignition switch and push the hand starter button on the dash. The solenoid operates the same as the one used on 1933 cars, but is controlled by the relay. The relay is controlled by the starter push button. In this way a heavy wire is used only between the relay and the solenoid instead of between the starter button and the solenoid. This eliminates the passing of heavy current through the starter button and making a voltage drop in the wiring.

The relay is essentially an electromagnet. Its winding is connected in series with the starter button, the ignition switch and the generator. When the core is sufficiently energized, the armature is pulled down closing the solenoid circuit, thus operating the solenoid plunger. The smaller solenoid winding is the holding coil to keep the plunger in the engaged position until the engine is running.

The starter relay is connected in the electrical system in such a way that when the generator is charging, the relay is inoperative. This means that when the engine is running, the starter cannot be engaged accidentally. When the engine starts running, the solenoid circuit is automatically opened, allowing the starter gear to disengage from the flywheel. The solenoid is inoperative unless the ignition switch is in its "on" position.



Buick



Pontiac

KNEE ACTION...

THREE types of independent front wheel suspension are found on 1934 cars. According to types they can be grouped as follows: 1. Chevrolet Master 6 and Pontiac; 2. Buick, Cadillac, Chrysler 6, Dodge, LaSalle, Oldsmobile and Plymouth; 3. Hudson, Nash and Terraplane.

Chevrolet and Pontiac... 1934—With this type front end suspension, all working parts are contained in a housing and operate in a bath of shock absorber fluid.

The wheels turn on ball bearings mounted on a spindle arm which is attached to the rear of the wheel support arm. The forward end of the wheel support arm is splined to a shaft which passes into the housing where the spring lever is splined to it. The wheel support arm normally is approximately horizontal and the wheel spindle end is free to move in a vertical arc to meet road variations. The wheel support arm splined shaft is mounted on needle bearings and sealed at the housing against leakage and sealed also against the entrance of dirt.

The spring lever carries the spring seat on needle bearings and has integral cams which operate the double acting shock absorber at the front of the housing. Side thrust and steering loads are carried through the wheel support arm splined shaft to thrust surfaces inside the housing.

The spring lower seat is guided by the spring guide which is free to slide in the spring upper seat. The spring upper seat is piloted in a spherical recess in the housing cap and the bumper spring is placed between the two spring seats to prevent bumping through when driving on rough roads.

The main spring is of the compression coil type and surrounds the bumper spring.

The rear end of the housing is welded to the steering knuckle member which carries the steering kingpin, which is held in place with a tapered bolt in the conventional manner. The kingpin rotates on needle bearings mounted in the stationary kingpin support. Car weight is carried on enclosed ball thrust bearings placed between the knuckle and the upper member of the kingpin support. Play is adjusted by shims between the bearing and the support. A hand gun is recommended when lubricating the kingpin for excess pressure may force out the plugs at either end of the kingpin, permitting the lower needle bearings to fall out.

Front suspension units, the housing with wheel support arm and wheel spindle attached, are serviced as complete units only.

After any major work has been performed on the front suspension unit check the caster, camber and toe-in.

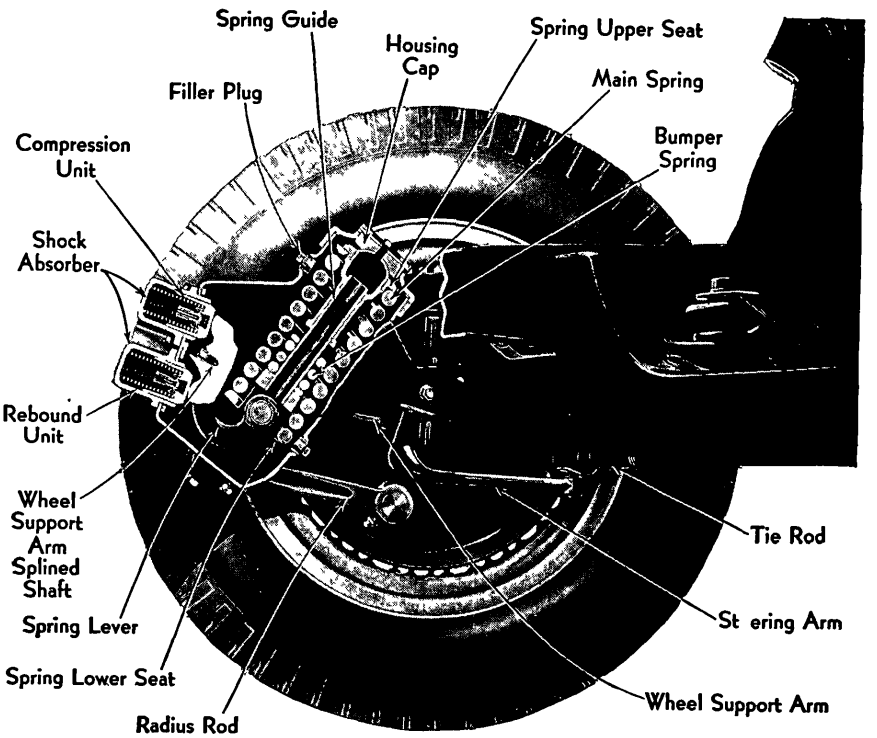
Adjustment... The following procedure should be followed in checking front end alignment.

Inflate tires to specified pressure. This must be accurate and the same for both wheels.

Check adjustment of front wheel bearings and looseness at kingpin and tie rod ball joints.

Check wheels for runout. They should not be out more than ⅛ inch.

Check wheels for balance. The tires have two types of balance marks, round and square. When checking, always place wheels and tires with square marks on the front. Always assemble the balance mark in line with the valve stem.



Chevrolet and Pontiac wheel suspension

See that the shock absorbers are operating properly. The front suspension housing and the rear shock absorber should be filled to the level of the filler plug with the special low viscosity shock absorber fluid. An adjustment in the ride can only be made by changing the valves in the shock absorbers. Before considering changing valves due to the ride being too soft, make sure that the units are filled to their proper level, that working parts are in good mechanical condition, that all orifices are clear and that piston clearance in the cylinders is not greater than .003".

Check steering gear, drag link and tie rod for excessive looseness. The conventional single tie rod is used on these cars.

Check camber with the car loaded. If it is out more than ½ degree it should be corrected. Before changing the camber, check the suspension unit support arm and radius rod for bends and also check for loose rivets in the supporting spindle and wheel support arm. The tread should be 56⅝ inches. The camber is adjusted by bending the kingpin support. Care should be exercised in placing padding between the support member and the bending tool to prevent crushing the support member.

Check the toe-in 9 inches from the floor. Adjustments are made in the conventional manner.

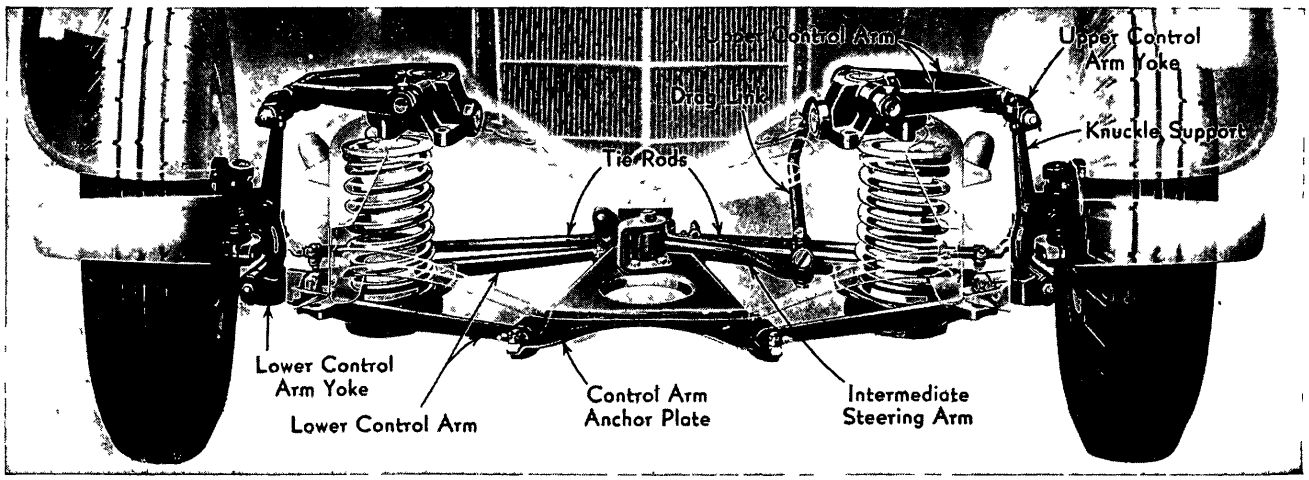
Check the caster which should be within ¼ degree of vertical with the plane of the frame. Proper steering is obtained by locating the center line of the wheel 3/16" to the rear of the center line of the kingpin with the car empty, causing a trailing action of the wheel. When checking the caster it is absolutely necessary that the top of the frame be level with the surface on which the car is standing. To attain this position the distance between the floor and the under side of the kingpin support, measured directly in the center of the support member, should be 15¾" and at the rear the distance from the floor to the underside of the frame side rails should be 19" at the extreme rear. Jacks should be used to raise the car to this level, starting at the front. Corrections are made by twisting the kingpin support and care should be exercised in placing padding between the support member and the bending tool to prevent crushing the support member.

Check steering geometry. When the outer wheel turns 20 degrees, the inner wheel turns 23 to 24 degrees. If the steering arms are bent they should be replaced, not straightened.

Buick, Cadillac, Chrysler 6, Dodge, La Salle, Oldsmobile, Plymouth—With this type of front end suspension, the wheel spindles and knuckles are similar to those used with the I beam axle. The knuckle is mounted on a knuckle support, corresponding somewhat to the end of the conventional I beam. The knuckle support is pivoted at both upper and lower ends to V-shaped control arms. The upper control arm is attached at its inner ends to the shock absorber camshaft. The lower control arm is pivoted at its inner ends to the control anchor plate attached to the underside of the frame front cross member.

The control arms allow the knuckle support, spindle and wheel to move through a vertical plane only. The lower control arm is longer than the upper one

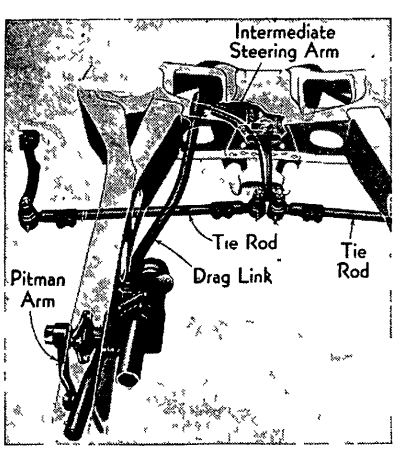
KNEE ACTION...



which provides for a change in the camber of the wheel to mathematically compensate for front tread width variation occurring as the coil chassis springs rebound or compress.

The chassis coil springs are supported at their lower ends in sheet metal seats riveted to the lower control arms and the upper ends seat in the frame front cross member. Metal cups are fitted inside the coil springs, the upper ones being fitted with rubber extensions which act as bumpers to limit the travel of the springs.

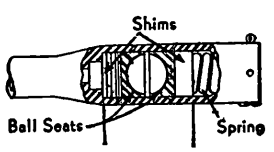
Adjustments are provided for caster, camber and toe-in angles but if any of these angles become upset through accident, do not attempt to make any adjustments until the bent or damaged parts have been replaced, not repaired. All parts of the front suspension, including the steering arms, are made of heat treated steel and the use of heat will cause soft spots at which breakage will occur. Under no circumstances should the parts be welded.



Buick—*Steering Gear*... The steering wheel spokes are set so that one spoke is straight down when driving straight ahead. This locates the roller tooth at the high center point of the steering worm and is important for otherwise the gear will have backlash which cannot be taken up by adjusting. Raising or lowering the steering wheel causes the wheel to rotate and changes the position of the spoke. Provision is made to correct this condition by an adjustment at the rear end of the drag link.

Set the front wheels in their straight ahead position. They are in this position when the distance from the center of the tire to the front, lower control arm inner bolt measures the same on each side. With the wheels in this position, the intermediate steering arm should be in its center position, on the center line of the chassis.

After the wheels are set straight ahead, note the position of the steering wheel spoke which is marked on its underside near the hub. Measure the distance, on the steering wheel rim, from the center of the marked spoke to the straight down position. This will show how much the



pitman arm ball seats in the drag link must be shifted. If the distance is less than 5/8" off center it will not be necessary to change the adjustment.

When an adjustment is necessary, disconnect the rear end of the drag link. Arrange the shims on each side of the ball seats in the same order as they were arranged in the drag link. Measure the total thickness of the shims on each side. The full combination of shims must always be used. They are as follows: one 1/2", three 1/8", one 1/16" and two 1/32". For each 5/8" that the marked spoke is off center, measured at the rim of the steering wheel, it will be necessary to shift the ball seats in the rear end of the drag link 1/32". If the spoke sets to the left, shift the ball seats to the rear by removing shims from the rear and placing them at the front. If the spoke sets to the right, shift the ball seats to the front.

Springs are provided in the ends of the drag link to take up wear and absorb shock. When either end of the drag link is assembled to the ball joint, an adjustment of spring tension is necessary. To make an adjustment, tighten the plugs on the ends of the rod solid and then back them off 1/4 to 1/2 turn on each end. Covers are provided for the ball joints at each end. When the pitman arm ball is toward the front, assemble the cover with the long end toward the rear and when the ball is toward the rear, assemble the long end toward the front.

The intermediate steering arm turns on taper roller bearings. Play in the bearings is taken up by removing shims between the lower cap and the bracket.

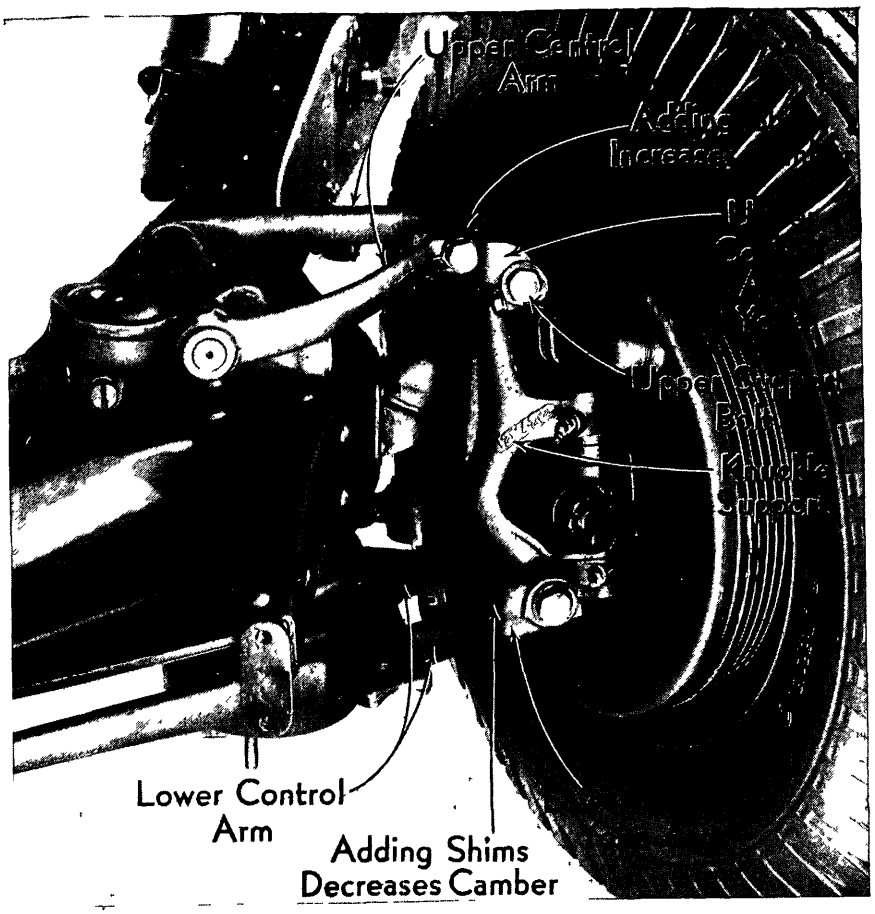
Front Wheel Alignment... Jack up the front of the car and remove the complete wheel with tire. There is a pad on the lower front control arm to accommodate the head of the jack. Check the tire for runout on the outside and at the side. It should not exceed 1/16". Replace the wheel when correct and make sure that the bearings are properly adjusted and that the kingpin bushings are not too loose.

Remove the jack and inflate the tires to their specified pressure. This must be accurate and the same for both wheels. Remove any looseness in the drag link and make sure that the clamp bolts on the ends of the tie rods are tight. If looseness is found in the sockets, they should be replaced.

Toe-In... Place the car on a level floor with the front wheels in their straight ahead position. Roll car ahead at least one full revolution of the wheel with normal load on the tires. Check the toe-in at the center of the tread. If checked at the side of the tire it should be 1/8" to 3/16" less at the front than at the rear.

The intermediate steering arm must be on the center line of the car when the front wheels are in their straight ahead position and set to their proper toe-in. If the arm is not on the center line, the tie rod should be lengthened on one side and shortened on the other until the arm is in its correct position. If this change is necessary, the toe-in should be rechecked and the steering wheel relocated. To adjust the length of the tie rods, loosen the clamp bolts on each end and turn the rod only. To reduce toe-in and shorten the tie rod, turn the wrench toward the rear of the car on the right rod and turn toward the front of the car on the left rod. Turn in the opposite direction to increase the toe-in and lengthen the tie rod. Every eighth turn of the rod changes the toe-in 1/16". Both rods must be adjusted the same amount when changing the toe-in to retain the proper relation between the front wheels and the intermediate steering arm and the proper steering wheel location.

Caster... Before checking caster and camber make sure that the car is at curb weight, with no passengers or load but with the spare tire in place and with the normal supply of water, fuel and oil. The two front springs should be equally expanded to within 1/64". The front tires should be equal in wear and properly inflated.



A special nut is made for checking caster when special wheel aligning equipment is not available. Remove the nut from the steering arm at the knuckle, install the special nut in its place and tighten it against the machined surface on the front knuckle. Hold a protractor against the finished end of the nut and set the spirit level. The degrees of caster can then be read. Both sides should check within ⅛ of a degree.

To make an adjustment, jack up the front wheels until the tires clear the floor and loosen the nuts holding the control arms to the upper and lower knuckle support yokes one turn. Tap the upper and lower yokes to free them so that they may rotate in the control arms to the proper angle. This is important to prevent binding in the yoke bushings. Loosen the knuckle support clamp bolt on top of the knuckle support and turn the upper support bolt. Looking at the head of the bolt, from the rear, turn it clockwise to increase the caster and counterclockwise to decrease the caster. Every time the bolt makes a ¾ turn, the caster changes ¼ degree. Be sure to tighten the loosened nuts and bolts.

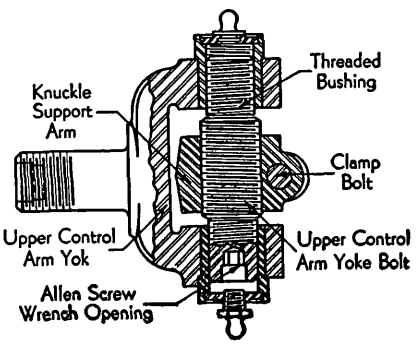
Camber... Make sure that all four wheels are on a level floor and that all tires are inflated to the specified pressure. If special wheel aligning equipment is not available for checking this angle, the following method may be used. Using a square, the distance between the rim at the top and the square should be 9/64" to 23/64" less than the distance between the rim at the bottom and the square.

Camber can only be changed by inserting washers between the upper and lower knuckle support yokes and the control arms. Inserting washers on the upper knuckle support yoke increases the camber and inserting washers on the lower knuckle support yoke decreases the camber. A 1/16" washer makes a change of ⅓ degree in the camber. Special washers are made for this purpose and care must be used that the washer does not bind on the chamfer on the yoke stud. Both sides should check within ¼ degree or if measured in inches, within 1/16".

Cadillac... 1934—Adjustments are the same as described for the Buick except for the operations described below.

The caster should be checked with the weight of the car on the front wheels and measurements made at pads on the front of the knuckle supports. One complete turn of the upper support bolt changes the caster ½ degree. Turning the bolt clockwise on the right side of the car, viewed from the driver's seat, increases the caster and turning it counterclockwise decreases the caster. On the left side, the upper support bolt is installed with its head toward the front and it is turned counterclockwise to increase the caster and clockwise to decrease it. Both wheels must be the same.

There is no provision for changing the camber other than replacing parts.



Oldsmobile... 1934—Before checking the front wheel alignment, the first steps are to inflate the tires to the recommended pressure and to centralize the steering gear.

Turn the steering wheel from extreme left to extreme right position, counting the number of turns, and then turn the wheel back one half the turns traveled. In this position the sector of the gear should be on its high point and the center of the pitman arm ball should be exactly perpendicular to the top of the frame.

The distance from the center of the pitman arm ball to the center of the steering arm ball should be 25 7/16" on the Six and 30 11/16" on the Eight. If the drag link has not been bent and this dimension is maintained, the intermediate steering arm should be in its central position with the end that attaches to the tie rods directly to the rear and on the center line of the chassis.

Toe-In... The wheels may now be placed in their central position and the required toe-in given to them by moving the car forward two or three feet and placing a string or straight edge approximately at the center of the wheels, along the walls of the rear tire and just touching the rear of the front tire. Adjust the tie rod for that wheel until the measurement from the straight edge to the front side wall is one half the total toe-in. This measurement should be taken at two or more points on the tire after moving the car forward two or three feet. The other wheel should be set in the same manner. After this the total toe-in should be correct when checked in the conventional way. Both tie rods must be the same length. If they cannot be made of equal length for correct toe-in, check the steering knuckle arms to determine whether or not they are bent. This can be checked by measuring the distance from the spokes of the wheel to the arms with a square. The distance should be the same on each side, within ⅛".

The factory recommends that no device for checking side slip of tires on turns should be used with wheels at more than a 20 degree turn. This angle may be checked by taking a measurement from the rear side of the front tire to the frame. This should not be less than 5¾" on the Six and 5⅝" on the Eight.

Camber and Caster... It is important when checking camber that the two side rails of the frame be the same distance from the floor because camber is greatly affected by a difference in these dimensions. It is also important when checking caster that the front end and the rear end of the car be at a given distance from the floor because a variation in height between the front and the rear of the frame affects the caster angle. With the car at curb weight, the height of the car frame at the front should be 14¼" measured from the center line of the front lower bumper mounting hole to the floor. The rear measurement should be 16½" measured from the center line of the rear bumper mounting hole to the floor. If the dimensions are not as specified, raise or lower the car to obtain these dimensions before checking the camber or the caster.

As any change in the camber angle affects the caster, the camber must be corrected first. The kingpin angle must be correct before measuring or adjusting the camber. With the car frame parallel with, and the proper height from the floor, the camber may be checked (if wheel aligning equipment is not available) by placing a square on the floor at right

angles to the wheel and measuring the distance to the rim at the top and the bottom. The distance should be 5/64" less at the top than at the bottom.

If an adjustment is necessary, jack up the car by the jack pad so that the weight is off the front wheel on which the adjustments are to be made. This will give sufficient clearance at the upper yoke nut. Disconnect the tie rod at the wheel end, otherwise the tie rod end will break or the tie rod will become bent when the upper yoke is disconnected. Remove the upper knuckle support yoke nut and pull the yoke out of the upper control arm. Placing shims between the upper control arm yoke and the upper control arm increases the camber; shims placed between the lower support arm yoke and the lower control arm decrease camber. A 1/16" shim changes the camber approximately 1/3 degree or 3/32" if measured at the rim.

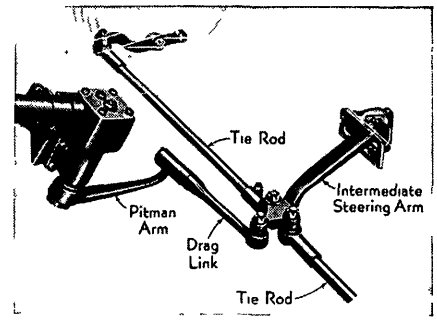
The caster may be checked by putting a protractor head with level against the two machined bosses on the front of the knuckle support. When using a protractor on these bosses the caster angle on the Eight will be from 3 degrees 47 minutes to 4 degrees 7 minutes and on the Six it will be from 4 degrees 7 minutes to 4 degrees 37 minutes. The reason for a different caster reading when using a protractor from that obtained when using front wheel aligning equipment is due to the difference in height of the bosses on the knuckle support.

The check can also be made with a square by placing it in front of the knuckle support. On the Eight the distance from the square to the top boss should be 29/64" greater than the distance from the bottom boss to the square. On the Six, the difference should be 1/2".

To make an adjustment, loosen the nuts holding the yokes to the upper and lower knuckle supports, and remove the lubrication fitting from the front bushing of the upper knuckle support yoke. Insert an Allen wrench and turn clockwise to increase the caster, and turn counterclockwise to decrease the caster. When the caster is correct, tighten the nuts holding the knuckle support yokes and replace the lubrication fitting.

La Salle . . . 1934—The construction and adjustments are the same as described for the Oldsmobile except for the shock absorber which is described in the shock absorber section.

Chrysler, Dodge and Plymouth . . . 1934—The construction and adjustments are the same as described for Oldsmobile except for the operations described below:

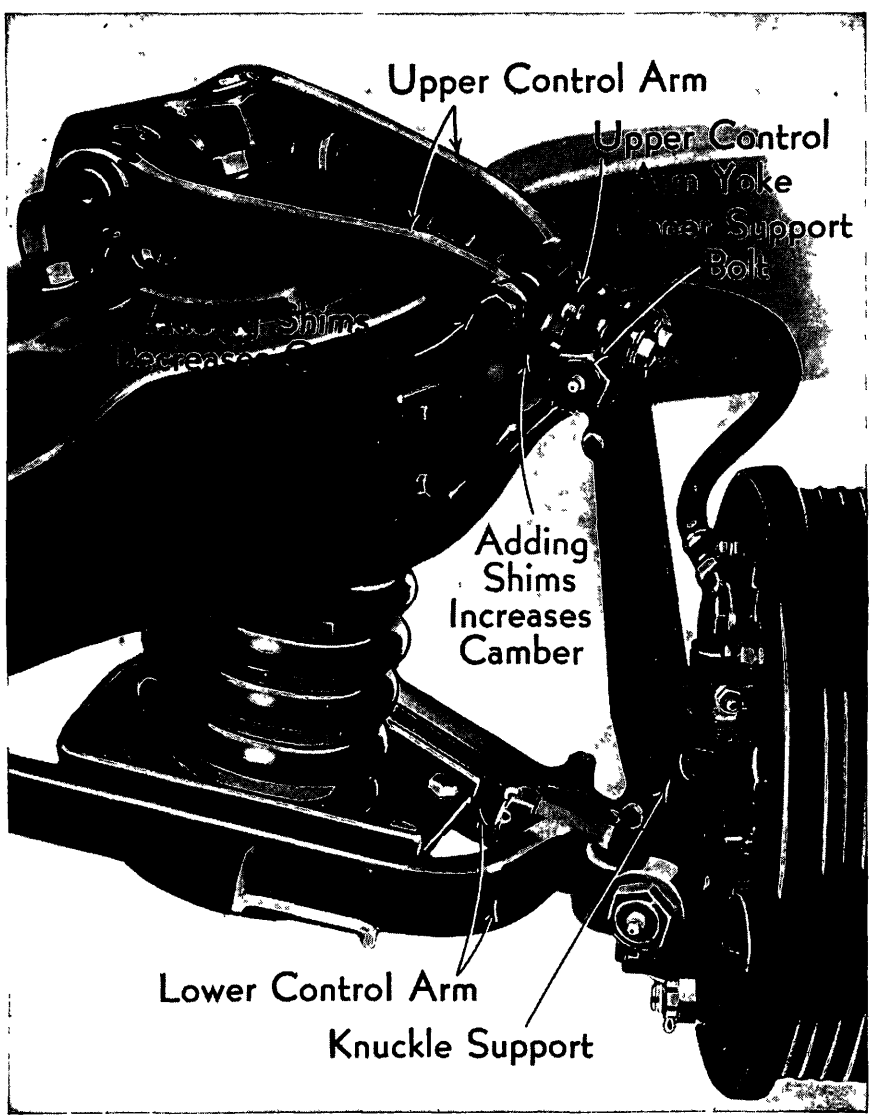


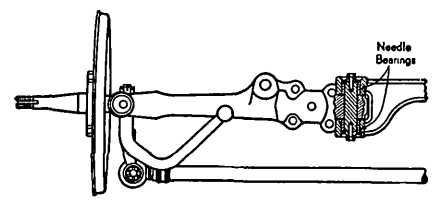
All measurements should be made with the car setting on a level floor and with the front wheels resting on floating turn table type checking fixtures. The factory states that unless this is done the reading will be inaccurate.

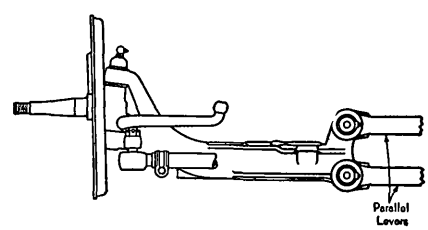
The angles should be checked in the following order: caster, camber and toe-in. Whenever adjustments are made which change the caster, the camber also changes. Therefore check the camber if necessary after resetting the caster.

Caster is measured with the weight of the car on the front wheels but before an adjustment is made, jack up the car so that the weight is on the springs but not on the wheels. The jack should be under the jack pad but a shop jack may be used directly under the lower control arm, next to the coil spring retainer.

To increase camber, install washers between the upper control arm yoke and upper control arm. To decrease camber, remove washers from between upper control arm yoke and upper control arm and place them on the inside face of the upper control arm, under the yoke nut. Caster and camber must be uniform within 1/4 degree at both front wheels.





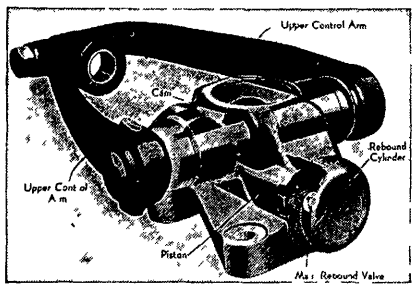


Hudson, Nash and Terraplane . . . 1934—A front axle is used which instead of being a solid I-beam consists of two end sections, similar to the ends of the conventional I-beam axle, which extend from the kingpin to a few inches inside the spring seats. These end sections are connected to two parallel levers by pins which turn on needle bearings. The needle bearings are filled with lubricant and sealed so that they should not require further lubrication.

Wheel alignment angles are measured and adjustments are made in the conventional manner. The one precaution that must be taken before measuring any angles is to see that the car is standing level so that a vertical line will pass through the centers of the upper and lower pivot pins on each end of the parallel levers.

SHOCK ABSORBERS...

For Knee Action



DELCO-LOVEJOY

Buick, Cadillac, Chrysler 6, Dodge, La Salle, Oldsmobile, Plymouth . . . 1934— Double acting Delco-Lovejoy shock absorbers, with the upper control arm of the spring suspension splined to either end of the shock absorber shaft which operates the cam within the shock absorber, are used on these cars. The cam operates a double acting piston in a single cylinder which controls rebound when moving in one direction and compression when moving in the other.

On Chrysler 6, Dodge, Plymouth, and Oldsmobile cars compression and rebound are controlled by valves in either end of the piston.

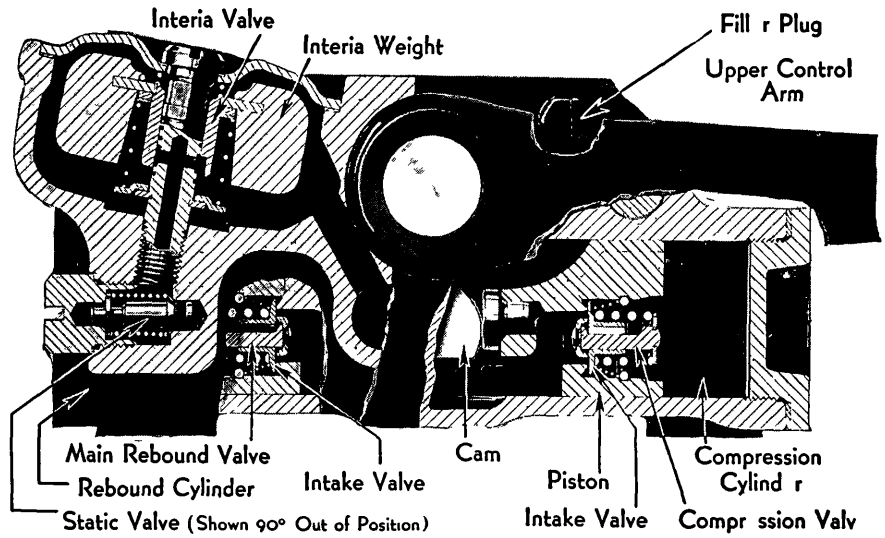
On Buick cars there is an inertia and a static valve in the rebound side to operate in conjunction with the rebound valve in the piston.

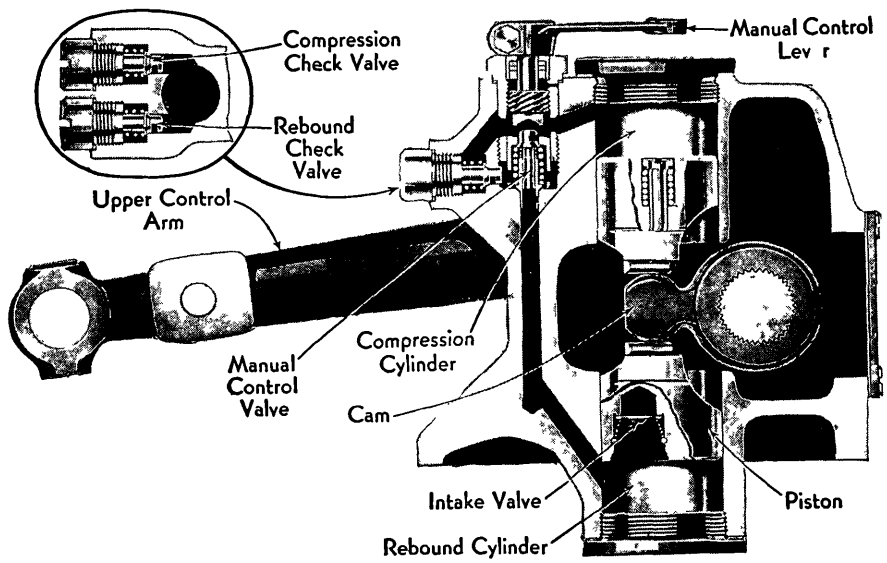
On Cadillac and LaSalle cars, a valve adjusted from the dash controls the flow of oil, in addition to the piston's rebound and compression valves.

The main rebound and compression valves are located at each end of the piston and operate both as the main control valves and as the inlet valves for filling the cylinders. Oil under pressure from the operating cylinder passes through the main control valve into a chamber of no pressure. On the return stroke, the large inlet valve, which is controlled by a very light spring, opens and allows oil to flow into the cylinder.

In units fitted with an inertia valve, the varying pressures on the rebound stroke, caused by unequal road conditions, are controlled by three valves, the static valve, the inertia valve and the main rebound valve. When the car is travelling over smooth roads, where there is very little movement of the frame and body, the weight in the inertia valve does not move and the orifice in this valve is open, thus allowing very little resistance to the oil flow from the cylinder to the reservoir. Under this condition the static valve, which is located between the cylinder and the inertia valve, gives just enough control without putting harshness in the ride.

When the car is travelling over rough roads, the frame of the car moves down and the lead weight in the inertia valve also moves down. As the frame moves up on the rebound, the lead weight, which is supported on a coil spring, does not move up as fast as the frame due to its inertia. This action closes the orifice in the inertia valve which makes the static valve inoperative and the compressed oil in the cylinder, under this condition, must pass through the main rebound valve.





The inertia valve also automatically compensates for changes in temperature due to the retarded action of its weight in cold weather.

These shock absorbers must be kept filled with shock absorber oil up to the level of the filler plug. It is recommended that they be checked at 1500 miles and then at every 5000 miles after that. To fill the front shock absorber, jack up the front end of the car by means of the jack pads on the lower control arms. Disconnect the upper control arm yoke from the upper control arm. Fill the shock absorber through the filler hole on the front side of the shock absorber body. The arm should be moved up and down two or three times to the limit of its travel to force out any air in the cylinders. More oil should then be added and the arm again moved up and down. This process should be repeated until no more oil can be added.

The only adjustment for these units, except the manual control on the Cadillac, is changing valves.

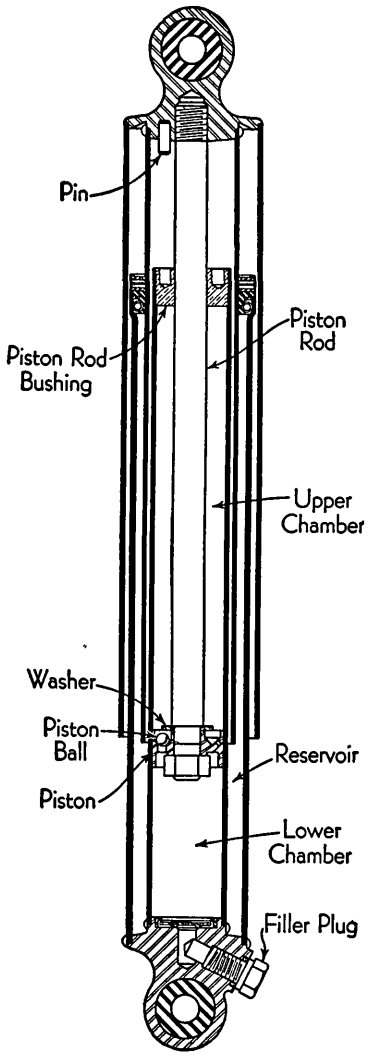
Direct Action Shock Absorbers—Two makes of direct action shock absorbers are used. With this type, the shock absorber housing and piston rod are connected across the car spring and attached directly to the frame and the axle. Any movement of the spring therefore moves the shock absorber piston in its chamber of oil.

MONROE

Continental, Terraplane . . . 1934—The operation is the same as described for the Spicer unit, the main difference being that there is a ball check valve and holes in the piston and the connection between the lower chamber and the reservoir is through a passage at the bottom of the lower chamber.

There is no adjustment for changing the riding qualities of the unit but special pistons are made to give a heavy or a light control if it is required.

To refill the unit, remove it from the car, remove the filler plug and pump all the oil out of the unit. Clamp the base in a vise with the filler hole up, compress the unit and screw a filler cup in the hole. Pour 3½ ounces of fluid in the cup for the front units and 4½ ounces for the



rear units. Pull the shock absorber to its extended position, sucking in the fluid.

The unit can be disassembled by compressing it until the pin in the top drops into one of the holes in the piston rod bushing. Then the piston rod bushing can be unscrewed and the upper and lower ends pulled apart.

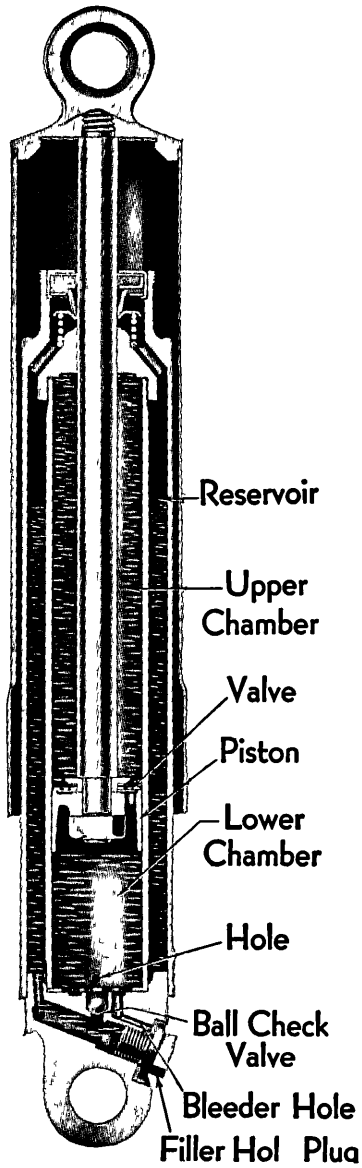
SPICER

Auburn, Hudson, Franklin, Reo... 1934—When the spring is compressed the piston is forced down and oil below the piston is forced through holes and valves in the head of the piston into the upper chamber. The volume of oil displaced by the piston rod is forced out of the lower chamber into the reservoir through openings in the chamber housing near the bottom.

On the rebound stroke the piston is pulled up and oil from the upper chamber is forced through the valves and holes in the head of the piston into the lower chamber. Since the piston rod is moving out of the chamber, the additional oil to displace it is drawn into the lower chamber from the reservoir through the openings in the chamber housing and the ball check valve at the bottom of the chamber housing.

The unit cannot be adjusted because the flow of oil is controlled by the size of the holes in the piston and the chamber housing.

To refill the unit it must be removed from the car, pulled out to its fully extended position and laid in a horizontal position with the filler plug up. Otherwise the required air space may be filled with oil. A fixture is made for this purpose because the unit must not be clamped by its housing. Oil should be poured into the unit until it rises to the top of the bleeder hole, visible when the filler plug is removed.



STEERING GEARS...

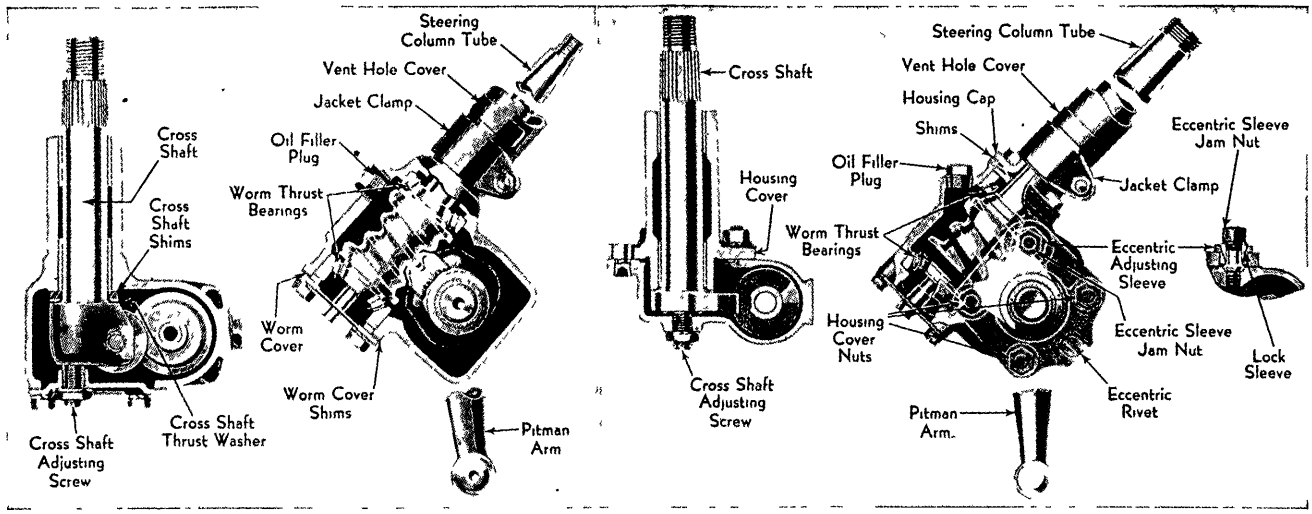
STEERING gears should only be adjusted to remove play from the steering gear and never to take up play in the steering linkage. A test should be made to make certain that the looseness is in the steering gear before disturbing any adjustments. When an adjustment is necessary, the drag link should be disconnected from the pitman arm ball. Note the adjustment of the drag link so that it can be replaced in the same position.

After the adjustment is correct, turn the steering wheel to the right as far as possible. Then turn it to the left as far as possible, counting the number of turns. Turn the wheel back just one half the total movement to its central position for straight ahead driving. Most steering wheels have a trade-mark or large depression on the under side of one of the spokes that should now be either directly up or down, whichever position is nearest to the central position. Place the marked spoke in this position and place the front wheels in position for straight ahead driving. It should then be possible to connect the drag link to the pitman arm ball by only moving the gear slightly. If this cannot be done, remove the pitman arm from the steering gear cross shaft and place it on the splines in the proper position. Otherwise it will not permit the front wheels to swing equally to the left and right.

GEMMER—WORM AND ROLLER

Chrysler, DeSoto, Dodge, Hupmobile 421J, 427, LaFayette, Nash, Packard 12, Plymouth... 1934—Before making any adjustments, make the following test for proper worm bearing adjustment. Turn the steering wheel about one turn to the right from its straight ahead position. Secure it in this position to prevent any oscillation when the front wheels are shaken violently. This can be done by tying one spoke of the steering wheel to a left door column and holding the wheel against it as a brace. Grip the column with the other hand just below the steering wheel hub with the side of the finger barely touching the lower end of the steering wheel hub. Now have a helper shake the front wheels hard sideways. This will enable any end play in the worm bearings to be felt at the steering wheel hub. If any end play exists, the worm bearings need adjusting. Be sure that end play is felt and do not be confused with play or give in the jacket bushing. The worm bearing adjustment should be correct before further inspection of the gear is made.

To adjust the worm bearings, loosen the four worm cover screws ⅛ inch. Use a knife and separate the top shim, passing



the blade all the way around between the shims, being careful not to mutilate the remaining shims. Remove only one shim at a time between inspections. Do not remove enough shims to make the worm bearings stiff.

The drag link must be removed from the pitman arm ball for satisfactory inspection of the other adjustments, and the alignment of the gear in the car. Now revolve the steering wheel to determine if any stiffness exists. If so, too many shims have been removed or the gear is misaligned in the car.

To correct gear misalignment, loosen the frame bracket bolts enough to allow the gear to shift in the frame and line up at the angle determined by the setting of the instrument board gear bracket. Tighten the frame bracket bolts. Now loosen the instrument board gear bracket and allow it to shift to match the gear column position and retighten.

To inspect for end play of the cross shaft, turn the steering wheel to either extreme and back ⅛ turn. By gripping the pitman arm at its hub, the roller shaft should rotate freely without end play. If end play exists, turn the cross shaft adjusting screw clockwise, after loosening the lock nut, until the end play is removed.

After the cross shaft and column adjustments are correct, check for proper mesh of the roller in the worm. Turn the steering wheel to its center position and shake the pitman arm to determine the amount of lost motion. If this lost motion exceeds 1/32", the cross shaft should be adjusted. The gear must be removed from the car for this adjustment. After it is removed, clamp it in a vise with the column to the right of the vise and remove the cross shaft. Be careful that all the cross shaft shims remain on the cross shaft and do not drop off into the housing behind the worm. Remove the steering column jacket from the gear housing and replace the steering wheel on the column. Adjust the worm bearing if that has not already been done. The cross shaft thrust washer is assembled with the chamfered side next to the cross shaft thrust face. Play between the roller and worm is taken up by removing shims from behind the cross shaft thrust washer. The position of the roller contact with the worm is offset from the center line of the worm and when a shim is removed, the roller is moved into closer mesh with the worm.

Select through trial, the proper amount of shims to produce not more than .006" play at the end of the pitman arm and without heavy drag on the steering wheel. Now remove one shim from the cross shaft and insert the cross shaft in its housing. Turn the steering wheel nearly to its left stop. Now hold the cross shaft in place with thumb pressure on the head end of the shaft and turn the steering wheel to the right until the shaft roller is in the center of the worm. Do not reverse turn to the left. While holding the roller shaft in place, grip the splined end of the cross shaft with the other hand and try to rotate it. If any play exists it will be necessary to remove another shim and repeat the operation until play felt by the hand in the center of the gear is removed.

When the proper amount of shims have been selected, turn the steering wheel close to either stop and reassemble the cross shaft cover. Tighten the screws securely and drive the pitman arm on the cross shaft. Now loosen the cross shaft adjusting screw lock nut and tighten the cross shaft adjusting screw until all end play in the cross shaft has been removed when the gear shaft is rotated in its lash position near the end of the worm. Lock the cross shaft adjusting screw and reinspect the gear for freedom of operation throughout and the absence of end play in the cross shaft adjustment.

When reassembling the jacket on the gear, use nothing but castor oil on the jacket bushing.

GEMMER—WORM AND SECTOR

Ford, Hudson, Hupmobile 417, Terraplane ... 1934—An automatic take-up device is provided between the upper worm thrust bearing and the housing cap to eliminate adjustments except after considerable service.

Before altering this adjustment, be sure that the cause of the trouble is not from some other looseness such as ball sockets or end play on the cross shaft. Turn the steering wheel about one turn to the right from its straight ahead position. Secure it in this position to prevent any oscillation when the front wheels are shaken violently. Make the test in the same manner as described for the Gemmer worm and roller type. If the end play is less than .010", no adjustment is required. If it exceeds .010", remove one shim from under the housing cap.

To do this, loosen the jacket clamp bolt and move the jacket clamp up to about ⅜" above the lower end of the jacket. Loosen the instrument board bracket clamp from the bracket. Work the jacket down until its lower end is against the housing cap. Now remove the housing screws and work the jacket up until it is stopped by the bottom of the steering wheel recess.

There should now be about ⅜" space between the top of the housing and the housing cap to remove a shim. Use a knife to separate the top shim by passing the blade all the way around between shims and be careful not to mutilate the remaining shims. Now cut the shim near one hole on an angle and remove it. Reverse the operations to reassemble, being careful to locate the jacket so that its top end will clear the bottom of the steering wheel recess, thus preventing friction at this point. Locate the jacket clamp as near to the bottom end of the jacket as possible.

Correct for misalignment of the steering gear column. Loosen the frame bracket bolts just enough to allow the gear to shift in the frame to line up at the angle determined by the setting of the instrument board gear bracket and tighten the frame bolts. Now loosen the instrument board gear bracket and allow it to shift to match the position of the steering column. Tighten the bolts.

Before adjusting end play in the cross shaft, see that the eccentric sleeve jam nut and the housing cover nuts are tight. Turn the steering wheel to either extreme position and then back ⅛ turn. By gripping the pitman arm at its hub, the cross shaft should rotate freely but without any end play. If there is any play, it can be taken up by turning the cross shaft adjusting screw clockwise after loosening its lock nut. Tighten the lock nut after the adjustment is made.

To adjust for proper mesh of the sector teeth, turn the steering wheel to its central position. Loosen the housing cover nuts ¼ turn and the eccentric sleeve jam nut ½ turn. Turn the eccentric adjusting sleeve clockwise very gradually, checking at each movement the amount of lost motion at the pitman arm ball. The adjustment should be tightened until the lash can just be felt at the ball. Be sure to finish the movement of the eccentric sleeve in a clockwise direction. Turn the steering wheel throughout its full travel to test for free operation. If too tight, turn the eccentric adjusting sleeve counterclockwise and then make the adjustment as described above. When this is correct, tighten the eccentric sleeve jam nut first and after this, tighten the housing cover nuts.

The worm is machined to provide close mesh with the sector teeth in its straight ahead position with gradual relief toward the extremes. Since normal wear is greatest at the straight ahead position, it

permits adjustments without binding toward the extremes.

When the sector teeth are properly centralized in relation to the worm thread, there should be an equal amount of lash in the mesh of these parts at ⅓ turn of the steering wheel each side of its straight ahead position. If this is not the case, the tooth contact must be centralized.

An eccentric rivet adjustment is provided for this contact and permits the sector shaft to be shifted to either side of the worm mid-position.

To make this adjustment, the sector shaft teeth must be in their straight ahead position in the center of the worm. Turn the steering wheel ⅓ revolution to the right and shake the pitman arm to note the amount of play at that point. Now turn the steering wheel ⅔ revolution to the left so that it is ⅓ turn to the left of its straight ahead position and shake the arm. Play in both these positions should be the same. If there is more play at the left position, turn the eccentric rivet counterclockwise. If there is more end play at the right position, turn the eccentric rivet clockwise.

After these positions have been equalized, adjust the mesh of the sector teeth in the worm as already described.

To lubricate the steering gear, remove the oil filler plug and also the vent hole cover, fill with lubricant until it comes out of the oil vent hole. Replace the vent hole cover and the plug. Avoid the use of graphite, white lead or heavy solidified oil.

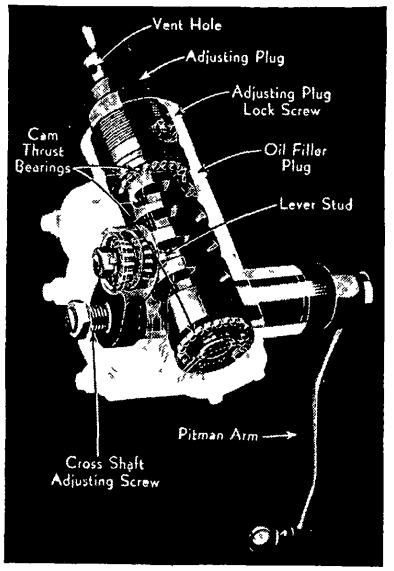
ROSS—CAM AND LEVER

Auburn, Graham, Pierce-Arrow, Reo, Studebaker . . . 1934—If the column tube is held in the adjusting plug by a clamp bolt, loosen the bolt. If there is no clamp bolt, the tube is pressed into the adjusting plug and the dash bracket must be loosened so that the tube can turn when the adjusting plug is turned.

Adjust the cam thrust bearings to take up play of the cam first. This is indicated by end play in the steering column tube. Loosen the cross shaft adjusting screw to free the lever stud in the cam groove. Back off the adjusting plug lock screw and its lock nut. Now turn the adjusting plug until a slight drag is felt when turning the steering wheel. Then back off the plug about 1/6 turn so that the steering wheel turns freely without any up or down movement of the column tube. Tighten the adjusting plug lock screw and its lock nut.

After this is correct, adjust the position of the lever stud in the groove of the cam for backlash. This shows up as end play of the cross shaft. The groove in the cam is cut deeper in the ends than in the center to permit taking up backlash in the straight ahead position after normal wear, without causing binding at the ends. Tighten the cross shaft adjusting screw until a slight drag is felt through the center position when turning the steering wheel slowly from one extreme to the other. It must not bind at any point. Tighten the lock nut.

Tighten the adjusting plug clamp bolt or the dash bracket clamp. Turn the steering wheel to see if this has made the gear stiff. If it has, the steering column is out of alignment. To correct the alignment, loosen the dash bracket, and if necessary, the frame bracket. It may be necessary to shim the dash bracket. See that the frame bracket is tight to the



frame and rigidly clamps the steering gear so that it does not spring when the steering wheel is turned with the drag link connected and the wheels on the ground. Test the gear to make sure that tightening the brackets has not caused it to bind.

In rare cases, it may be necessary to adjust the roller bearing mounted lever stud. This should not be done except as an adjustment for natural wear, and care must be taken not to nick or burr the finished surfaces.

If inspection shows too much end play in the stud, grip its straight cylindrical shoulder in a vise with the nut end up. Straighten out the prong of the lock washer and tighten the nut only until a slight drag is felt when turning the stud with the fingers. A new bearing should be set a trifle tighter than one which has been used. Tap each end of the stud lightly and test the adjustment. When the adjustment is correct, select the prong of the lock washer which is at right angles to a side of the nut and bend it up to lock the nut in this position. Do no use a washer twice unless the prongs which were used the first time have been removed. Test the adjustment and then wash the bearings in clean gasoline and dry them with compressed air.

If the stud bearing is tight or binds, tap each end of the stud lightly and then test it again. If it is still tight, make an adjustment as described above except turn the nut counterclockwise.

To lubricate the gear, fill the housing with lubricant through the pipe plug hole slowly until it begins to run out at the vent hole. If filled too rapidly, the air cannot escape through the vent hole and the lubricant will be forced out of the top of the gear. Use a heavy transmission grease of fibrous quality. It must possess cushioning as well as lubricating qualities but must not contain graphite in any form. Do not use ordinary grease or a universal joint grease.

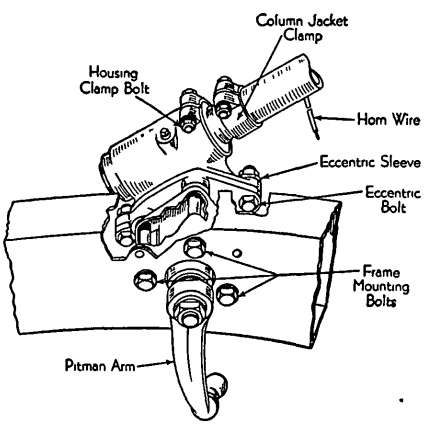
SAGINAW—WORM AND ROLLER

Chevrolet Master 6 . . . 1934—Before making an adjustment, loosen the frame mounting bolts ¾ turn and loosen the steering column bracket at the instrument panel.

To remove cross shaft end play, turn the steering wheel to its extreme left position and loosen the cross shaft adjusting screw lock nut. Turn the cross shaft adjusting screw clockwise just enough to remove the end play and tighten the lock nut. Turn the gear to each extreme position, but just off its stop, and move the pitman arm to see that the adjustment has not caused execssive binding of the cross shaft.

To remove worm end play, loosen the housing clamp bolt. See that the column jacket clamp bolt is pulled up tightly. Grip the column jacket clamp with a wrench and rotate the column jacket clockwise until a slight load is felt on the steering wheel with the gear near its extreme positions. The column jacket must be turned clockwise only, as the bearing adjusting nut must be in positive contact with the bearing when the adjustment is completed. Tighten the housing clamp bolt and loosen the column jacket clamp bolt. Rotate the column jacket to the left until the horn wire is at the bottom. Tighten the column jacket clamp bolt. When the adjustment is complete, the load on the worm bearings should not exceed 1¼ pounds when measured at the rim of the steering wheel with a spring scale. This check should be made with just sufficiently to remove the backlash and have a slight load when turning the steering wheel through its center position. A tighter adjustment will cause damage to the gear. In most cases, ⅛ turn of the eccentric bolt and eccentric sleeve is sufficient. Rotate the steering wheel to the right and left to see if there are any tight spots. If so, it will be necessary to loosen the eccentric adjustment only enough to allow the steering wheel to be turned through these spots without excessive binding. Tighten the frame mounting bolts and the eccentric bolt nut. With the gear properly adjusted, the load required to turn the gear through its center position should not exceed 2¼ pounds measured with a spring scale at the rim of the steering wheel. Check the backlash with the gear in its straight ahead position by feeling the pitman arm. There should be no movement of the pitman arm in the straight ahead position unless tight spots are encountered.

The steering gear is lubricated at the factory with a special steering gear lubricant developed for both summer and winter operation so that seasonal change of lubricant and draining of the housing is not necessary. The housing should be kept filled with the same type of lubricant.



SAGINAW—WORM AND ROLLER

Buick, Cadillac V8, Oldsmobile, Pontiac . . . 1934—The adjustments are the same as described for the Saginaw worm

and roller type used on the Chevrolet Master 6 except for the manner in which worm end play is removed.

To remove worm end play, loosen the housing clamp bolt. Rotate the column adjusting nut clockwise until a slight load is felt on the steering wheel when turning it near its extreme positions. When making this adjustment use care, for the adjusting nut should only be turned clockwise so that it will be in positive contact with the bearing race when the adjustment is complete. Tighten the housing clamp bolt.

SAGINAW—WORM AND ROLLER

Cadillac V12, V16 . . . 1934—The adjustments are the same as described for the Saginaw worm and roller type on the Cadillac V8 except that the adjustment for worm end play is at the bottom of the steering gear housing. To make an adjustment it is necessary to loosen the lower clamp and turn the plug. Backlash between the worm and roller is adjusted by turning the eccentric sleeve which is carried out of the top of the housing as a hexagon nut.

SAGINAW—WORM AND SECTOR

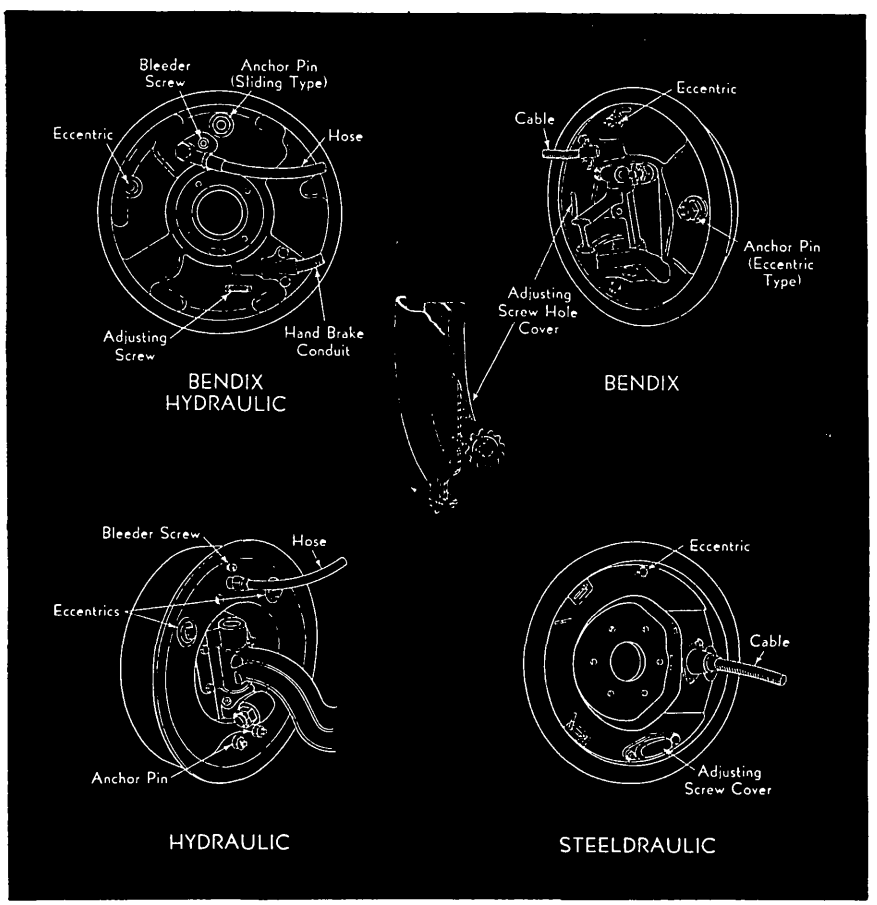
Chevrolet Standard 6 . . . 1934—The adjustments are the same as described for Chevrolet Master 6. Great care must be taken when removing worm end play. The column jacket must be turned clockwise only so that the adjusting nut will be in positive contact with the worm bearing when the adjustment is completed. It is impossible to turn the adjusting nut backward and therefore if it is turned up too far, it will be necessary to disassemble the steering gear.

BRAKES . . .

BEFORE adjusting brakes, lubricate all bearings and clevises so that the brake control system will operate freely and return sharply to its stop when the pedal or hand lever is released. Check all return springs and replace any that are found weak or broken. Additional return springs should not be installed in the brake control system to hasten the release action for they increase pedal pressure and are entirely unnecessary. It will usually be found that correct lubrication and proper adjustment will produce satisfactory results.

When equalizing brakes, always loosen tight brakes rather than tighten loose ones and then make the final test on a brake tester or road test.

Much braking trouble will be avoided if the lubrication of the rear axle and front wheel bearings is held to the correct amount as it will prevent grease from saturating the lining with oil or grease.



HYDRAULIC

Chrysler 6, 8, Imp. 8, Imp. Cust. 8, De Soto 6, Dodge 6, Graham 6, 8, Plymouth 6, Reo 6, Royale 8 . . . 1934—Cam adjustments are provided on each brake shoe to take up lining wear. Adjust one cam at a time. Turn the cam nut outward until the lining comes into contact with the drum with sufficient pressure to stop the wheel from spinning. Then turn the nut in the opposite direction until the lining clears the drum and the wheel just turns freely. The cam adjusting nuts are held in position by friction springs.

The eccentric anchor pins at the bottom of each brake shoe usually only require adjustment after the brake shoes have been relined. A brake drum gauge and a brake shoe gauge or a dummy drum should be used when adjusting the anchor bolt. Insert a .005" feeler gauge between the lining and the gauge or dummy drum and turn the anchor pin so that the lower end of the lining just contacts the gauge. This is the setting for the front shoes. For the rear shoes, use a .007" feeler. Now insert a .010" feeler between the lining and gauge or drum and turn the cam until the top of the lining just contacts the feeler. Recheck the clearance at the lower end of the shoe and, if necessary, readjust the anchor bolt.

The pressure applied to each of the four brake drums is automatically equalized through the fluid in the system.

The reservoir is part of the master cylinder and should be kept at least half full of fluid as it compensates for fluid expansion and contraction due to temperature changes.

It will be necessary to bleed the brake lines to remove air from the system every time the brake line connections are disconnected or after any of the cylinders are removed or replaced. It will also be necessary to bleed the lines if sufficient fluid has leaked out of the system to cause air and dirt to enter.

The rod between the pedal and the master cylinder must be adjusted to give the pedal ¼ inch free play. This insures the compensating port between the master cylinder and the reservoir being left open. If the play is greater, the piston stroke will not be long enough to apply the brakes before the pedal reaches the floor.

BRAKES . . .

BENDIX MECHANICAL

Buick 34-40, Hudson 8, LaFayette 6, Lincoln V12, Nash Big 6, Adv. 8, Amb. 8, Packard 8, Super 8, 12, Pontiac 8, Studebaker Comm. 8, Pres. 8, Terraplane 6, Willys 77 . . . 1934—Only two adjustments are necessary to compensate for brake lining wear, the eccentric and the adjusting screw. Before making this adjustment, jack up all four wheels and remove the adjusting hole covers from the brake backing plates and the inspection hole covers from the brake drums.

Inspect the brake cables. If loose or unequal, disconnect the cables at the cross shaft and adjust them as described under cable adjustment. What may appear to be loose cables may be the result of cables not returning properly due to lack of lubrication in the conduits.

Loosen the eccentric lock nut and insert a .010" feeler gauge between the lining of the top shoe and the brake drum. Turn the eccentric in the direction the wheel turns when the car is going forward until the gauge is snug at each end of the shoe. The clearance should not vary more than .003" at either end. In case of a variation, the clearance at the anchor end should be less than at the adjusting end. If the difference is greater than .003", the anchor pin must be adjusted.

Expand the brake shoes by turning the adjusting screw toward the rim of the backing plate with a special adjusting tool or a screwdriver. When a light drag is felt, release the adjusting screw until the brake is just free.

After all wheels have been adjusted in this manner, depress the brake pedal with a pedal pack or tighten the hand lever until the wheel with the least drag can just be turned by hand. Then back off the adjusting screw on the tight brakes until the brake drag is alike on all four wheels.

When the anchor pin must be adjusted, disconnect all cables at the cross shaft. Lubricate the cable and conduit assemblies through the lubrication fittings, if they are fitted, being careful not to force excess lubricant into the brake assembly. If there are no lubrication fittings, unfasten the conduit abutment brackets, clean the exposed portion of the cable and slip the conduit off the shaft, exposing that portion of the cable which is sheathed by conduit. Clean this portion of the cable and lubricate it freely with cable lubricant. Reassemble conduits, leaving the cross shaft clevises disconnected. Conduit ends must be firmly bottomed in their abutment brackets.

Two types of anchor pins are used, sliding and eccentric. The eccentric type is identified by its slotted end. The high end of the slot indicates the high side of the eccentric.

When the sliding type anchor is used, loosen the anchor pin nut at all wheels one turn. Then tap the anchor pin slightly in the necessary direction with a soft hammer and turn the eccentric in the direction of forward wheel rotation to give the clearance of .010" at each end of the shoe against which the eccentric operates. Tighten the anchor pin nut as tightly as possible with a 16-inch wrench. Tighten the eccentric lock nut.

When the eccentric type anchor pin is fitted, loosen the anchor pin lock nut at each wheel. Rotate the anchor pin in the direction of forward wheel rotation, meanwhile turning the eccentric in the same direction, to provide .010" clearance at each end of the shoe against which the eccentric operates. Hold the anchor pin after the clearance is correct and tighten the anchor pin nut as much as possible with a 16-inch wrench. Tighten the eccentric lock nut.

To adjust the cable, spread the shoes at each wheel by turning the adjusting screw until the brake drum can just be turned by hand. Pull the cables tightly toward the cross shaft levers to remove all cable slack and lost motion at the cam levers. Adjust the clevises so that the pins just enter the clevises and cross shaft levers easily. Lock the clevis jam nuts and insert the clevis pin cotters. Release the adjusting screw at all wheels until the brakes are just free of drag. Then continue the adjustment as described for brake lining wear.

BENDIX HYDRAULIC

Auburn 6-52, 8-50, La Salle 8, Oldsmobile 6, 8 . . . 1934—The shoe adjustments are the same as described for Bendix mechanical brakes. The pressure applied to each of the four brake drums is automatically equalized through the fluid in the system.

The rod between the pedal and the master cylinder must be adjusted to give the pedal ¼ inch free play. This insures the compensating port between the master cylinder and the reservoir being open. If the play is greater, the master piston stroke will not be long enough to apply the brakes before the pedal reaches the floor.

With the hand brake lever released and against its stop, hold the hand brake cable until the strut rod can be felt making contact with the brake shoe. Hold the cable in this position and adjust the clevis on the cable so that the clevis pin can just enter the brake cross shaft lever.

MIDLAND STEELDRAULIC

Hupmobile 417, 421, 427, Studebaker Dict. 6 . . . 1934—The brake pedal should have full travel and not bind on the floorboard. The cross shaft should be free but there should be no play between the pedal and the cross shaft.

With the hand lever and pedal in their fully released positions, loosen the brake cable clevis jam nut. Hold the brake cable ferrule from turning and turn the rod until there is 1/16 inch clearance between the end of the flexible shoe and the anchor pin. This clearance may be observed and measured through the inspection hole in the brake drum. It must be the same on all wheels.

Remove the adjusting screw cover and turn the adjusting screw clockwise one complete turn. A special wrench is not needed to turn this screw. Loosen the eccentric lock nut and turn the brake drum so that the inspection hole is in line with the eccentric. Turn the eccentric to obtain .015" to .020" clearance and then lock the eccentric in this position. Make certain that the brake does not drag and then replace the inspection hole cover.

Depress the pedal half its travel, usually about 3 inches, with a pedal jack. Turn the adjusting screw counterclockwise until a heavy drag is encountered when turning the wheel forward by hand. Release the brake pedal and equalize the brakes by turning the adjusting screw one notch at a time. Not more than a notch or two turn on the adjusting screw should be necessary to equalize the brakes. Replace the adjusting screw cover.

FORD

1934—Jack up all four wheels and remove the clevis pin from the wheel end of each brake rod. Turn the brake adjusting screw on each wheel all the way in and then back it off just enough to free the brake. With the hand lever in its full release position, the clevis pins for the rear rods at the cross shaft should be exactly over the clevis pins for the front rods. If not, adjust the rod from the pedal to the cross shaft. Push the brake lever at each wheel toward the cross shaft to take up play in the cam, etc. Adjust the brake rod so that the brake lever has to be moved toward the cross shaft an additional 1/32" to install the clevis pin.

With the hand lever in the second notch, test all wheels for equal braking action. If not equal, loosen the adjusting screw on the tight brakes until all turn with the same amount of effort. Each wheel should be turned not less than one revolution in making the test. When all brakes are equal, with the hand lever in this position, back off the adjusting screw on the rear brakes two notches.

BUICK

1934—Readjust the brakes when the pedal travels to within 2" of the floorboard with the brakes applied. For high speed, brakes should be adjusted when this distance measures 3".

Lubricate all brake connections and the front brake cables with chasis lubricant. The pedal should be set with approximately 3/8" clearance on the floorboard by adjusting the set screw at the lower end of the pedal. Excess pedal movement is removed by adjusting the rod from the cross shaft to the equalizer bar. When adjusting this rod, the vacuum valve must remain in its fully released position. The rod from the equalizer bar should be in the upper hole of the pedal on the 60 and 90 series and in the lower hole on the 50 series. Remove all slack from the hand brake lever cable with the lever in its fully released position. When all slack is removed, the cross shaft lever for the power cylinder rod must be against its stop.

Disconnect all the brake rods at the cross shaft lever and the power cylinder rod at its cross shaft lever. With the wheels in their straight ahead position, operate each brake separately by hand pulling the brake rod to see that the brake releases to its stop on the backing plate. When connecting the brake rod, adjust its length at the adjustable yoke so that all slack is removed, but with the cam lever still against its stop. When connecting the power cylinder rod, pull the piston to its fully released position before adjusting the length of the rod.

Jack up all four wheels. The points of adjustment are the same as on the Chevrolet. Loosen the centralizer lock nuts until the lock washers are free, permitting the centralizers to move. Take up adjusting screws until the wheels drag hard. Tighten the centralizer lock nuts. Back off the adjusting screws 14 flats for new lining and 12 flats for old lining. After backing off the nuts apply the brakes firmly to seat the nuts. Check the spring locks to make sure that they will hold the nuts from turning.

Remove the jacks and apply the brakes lightly with a pedal jack to determine whether or not all brakes have the same drag. If not, back off the adjusting nut on the tight wheel.

CHEVROLET

1934—Disconnect the pedal return spring, pedal rod, hand brake rod and the front and rear brake rods.

With the hand lever in its released position, adjust the rod so that it measures 15¼ inches on the Master 6 and 9⅜ inches on the Standard 6 from the back of the front hole to the back of the slot. Connect the rod. Hook up the pedal return spring and set the pedal stop so that the pedal clears the floorboard by ¼ inch. With the pedal against its stop, adjust the rod and when correct, connect it. Pull back on the rod end of the cable until it is tight with the cam lever still against its stop. Screw the rod into the cable end and connect the rod.

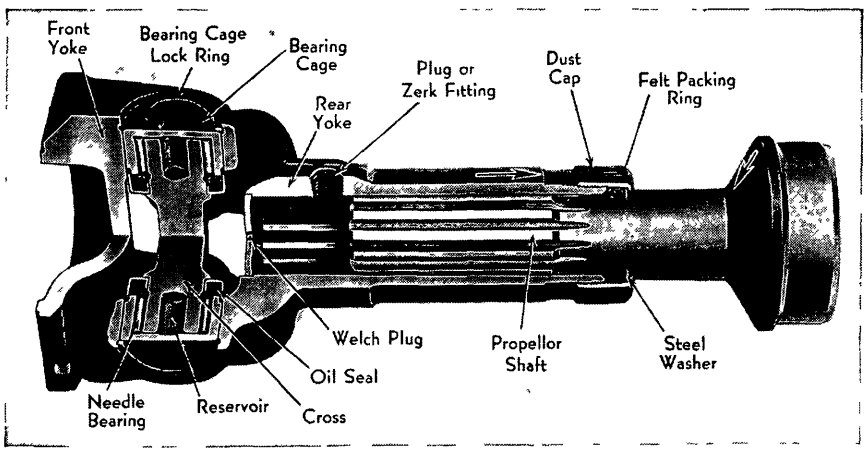
Loosen all centralizer lock nuts and make sure that the centralizers are free to move by tapping lightly up and down on the adjusting lever hub nut with a hammer. Give the brake pedal a hard, quick push and then release it. Apply the brakes moderately with a pedal jack and tighten the centralizer bolt nuts.

Jack up all four wheels and loosen the adjusting screw lock nuts. Turn the adjusting screws clockwise until the brake shoes drag very lightly. Tighten the lock nuts. Try the brakes for equal braking and loosen the tight brakes.

CADILLAC

1934—The brakes are the same type as used on Buick and Chevrolet cars and are adjusted in the same manner as described for Buick cars. Adjust the front and the rear brake rods at the cross shaft end to give the correct position to the cam levers. They are correct when the distance between the center of the brake cable hole and the edge of the brake cable bracket is 3⅝ inches at the front wheels and 3 13/16 inches at the rear wheels.

UNIVERSAL JOINTS



SPICER

Chrysler, DeSoto, Graham, Hudson, LaFayette, LaSalle, Oldsmobile, Packard, Reo, Terraplane... 1934—The only difference between the front and rear joints is that the rear yoke of the front joint is splined on the propeller shaft while the front yoke of the rear joint is integral with the propeller shaft.

To disassemble the joint, remove the lock rings from the yokes by pinching the ends together with pliers. Tap the exposed face of one of the bearing cages with a soft hammer until the opposite bearing assembly comes out. Then tap the exposed end of the cross journal until the opposite bearing assembly is free. There is nothing to prevent the needle bearings from falling out of the cages when they are removed from the yokes except the grease in the cage. It is best, therefore, to disassemble the bearings where all the parts can be salvaged if dropped. When the joint is dissembled, all parts should be washed and the reservoirs filled before reassembling.

The reservoirs in the cross journals are filled with S.A.E. 160 oil when the joint is assembled and new lubricant should be added every 15,000 miles. To do this the joint must be disassembled. Oil seals which show signs of not being grease tight should be replaced when lubricant is added.

The splined slip joint should be lubricated with a good grade of lubricant every 2,000 miles at a plug or Zerk fitting in the side of the rear yoke. The lubricant should not be packed in too tightly for it will damage the felt washer at the wear of the yoke or the welch plug at the front of the yoke.

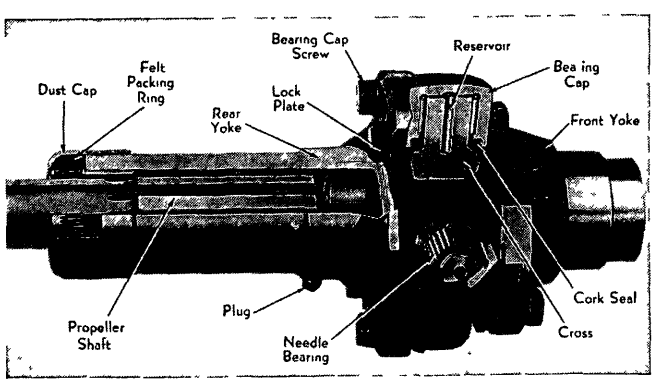
MECHANICS

Cadillac... 1934—This joint is disassembled and the splined slip joint lubricated in the same manner described for the Mechanics joint used on Auburn and Studebaker.

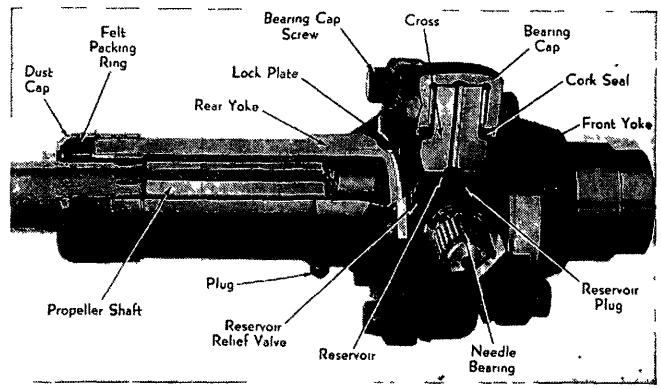
Lubricant is forced from a reservoir in the center of the cross through passages in the cross journals to the needle bearings. The reservoir should be filled every 5,000 miles. Remove the plug in the cross and inject a good grade of semi-fluid lubricant. Make sure that the pressure gun and fittings are clean to prevent dirt from entering the joint. A relief valve in the reservoir relieves excess pressures in filling to prevent damage to the cork seals.

The reservoirs in the cross journals are filled with lubricant when they are assembled and do not require additional lubricant for 20,000 to 30,000 miles. When lubricant is added, it is necessary to disassemble the joint.

The oil seal at the ball can be tightened against the ball by an adjustable nut to prevent oil leaks. In case of a bad oil leak, it is advisable to disconnect the rear axle and remove shims from the universal



Mechanics on Auburn and Studebaker



Mechanics on Cadillac

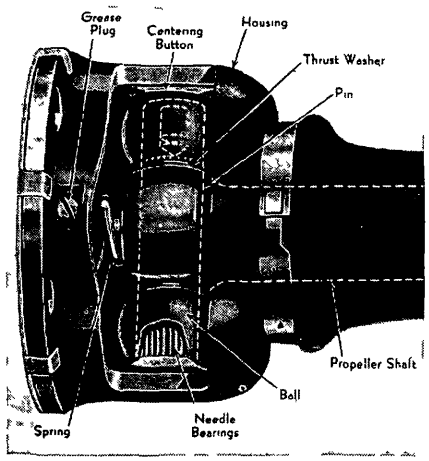
joint housing until the ball is a snug fit. Then tighten the packing gland. If the ball has end play it will act as a pump and the packing gland will not stop oil from leaking.

The joint is lubricated by oil from the transmission.

MECHANICS

Auburn, Studebaker... 1934—This joint is disassembled by removing the eight bearing cap screws, permitting removal of the bearing caps and the cross from the yokes. If a joint is removed and not to be disassembled, opposite bearing caps should be tied together to keep them in place on the journals of the cross. After disassembling a joint, each bearing cap should be thoroughly cleaned and packed with a high grade, semi-fluid lubricant. The cork seals should be replaced and the bearing screw lock plates may also have to be replaced. The lock plates must be turned up against the head of the screws. The steel stamping which encloses the cork seal is pressed into the bearing cap and holds the needle bearings in place. Each joint can be disassembled separately without removing the propeller shaft from the car.

The splined slip joint should be lubricated every 2500 miles with a high grade, semi-fluid lubricant by removing the plug from the rear yoke.



DETROIT

Dodge, Hupmobile, Plymouth... 1934—To remove the propeller shaft, remove the bolts holding the housing to the flange. Do not let the shaft fall for it may spring some of the parts out of shape. To inspect the parts, push back the housing and remove all the parts from the pin. If the housing or pin must be removed, remove the dust cover from the housing and press out the pin. If the dust cover fails, all parts must be thoroughly cleaned and inspected before installing a new cover for dirt has probably entered the joint.

No adjustments are provided to compensate for wear on any of the parts. Replacement of the parts will only be necessary when excessive radial movement exists between the balls and the pin. In some instances it will be found that the housing has worn as well as the balls so that it must be replaced.

Lubricate the joint every 10,000 miles by removing the plug and putting in about an ounce of a universal joint fibre lubricant. If more than an ounce is inserted the dust cover will swell and the centrifugal force created will cause the dust cover to split and leak. In some cases the excess lubricant will pile up in a lump on one side of the dust cover and cause vibration at high speed. Over lubrication is indicated by the dust cover seeming to be stuffed. It should be emptied by removing the plug and squeezing the dust cover by hand until all the lubricant has been forced out.

BOLTED TRUNNION

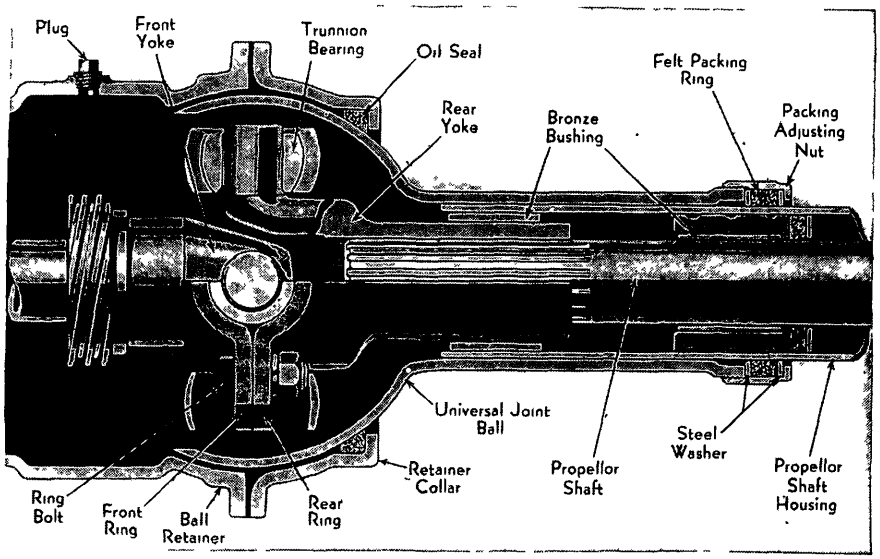
Chevrolet Master 6 and Pontiac 8... 1934—To remove the joint, remove the speedometer gear and shaft from the ball retainer to eliminate the possibility of stripping the teeth off this gear. Separate the joint by removing the cap screws holding the retainer collar to the ball retainer and slide the ball back on the propeller shaft housing. Remove the nuts from the ring bolts and split the joint. Remove the cap screw holding the front yoke to the transmission mainshaft and slide the rear yoke from the end of the propeller shaft.

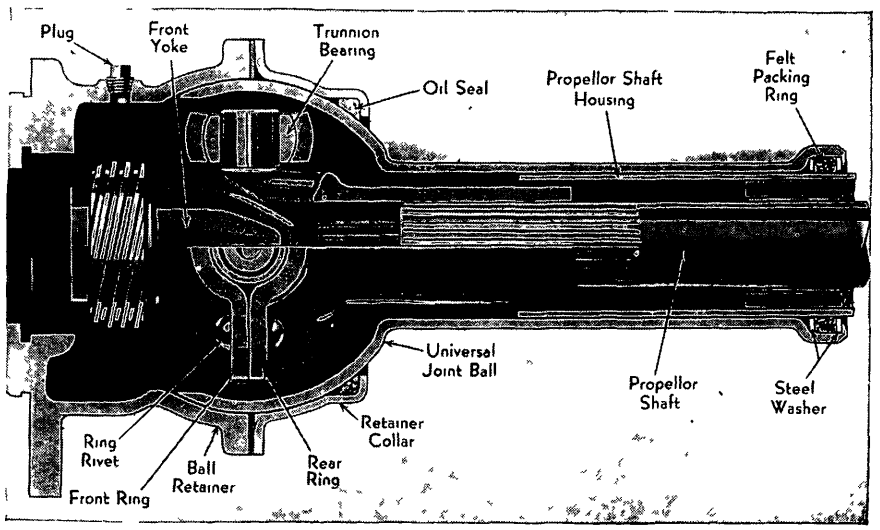
When assembling, make sure that the beveled side of the trunnion bearings is toward the inside of the yokes. After the joint has been installed, with the joint ball and retainer in place, remove the plug from the top of the ball retainer. Fill the joint with ¼ pound of S.A.E. 160 lubricant in summer and S.A.E. 90 lubricant in winter. The joint will require no further lubrication as additional lubrication is received from the transmission. The oil seal at the rear of the universal joint ball should be adjusted, by turning the packing nut, so that it is tight under all conditions.

Buick—The general construction is the same as the joint on the Chevrolet Master 6 except that the trunnion bearings have straight sides and are held in the yokes by wire snap rings. The ball is connected to the torque tube by a flange.

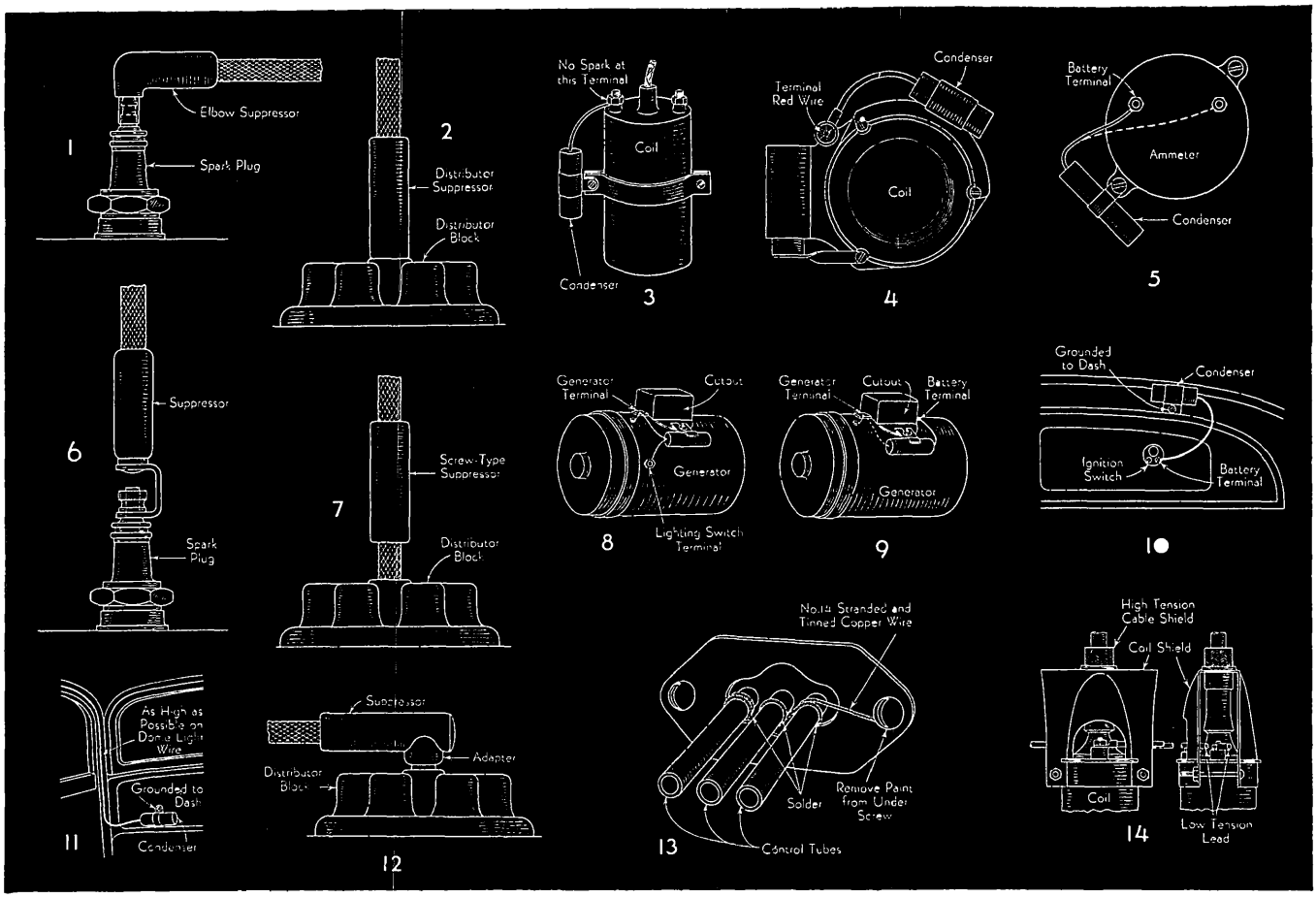
RIVETED TRUNNION

Chevrolet Standard 6... 1934—The removal of this joint necessitates the sliding back of the rear axle. To do this, unhook the brake rode and the spring U-bolts from the rear axle and slide it to the rear until the propeller shaft and propeller shaft housing are free of the rear yoke and the universal joint ball. Remove the ball retainer cap screws, the retainer collar and then the ball. With a long shank wrench, remove the cap screw holding the joint assembly to the end of the transmission mainshaft and remove the joint. As the yokes are riveted together parts for the joint are not serviced. The joint is lubricated the same way as described for the Chevrolet Master 6 and Pontiac 8 cars.





AUTO RADIO . . .



1—Elbow spark plug suppressor—*Cadillac, Chrysler, DeSoto, Dodge, Ford, Hudson, Hupmobile, LaFayette, Nash, Packard, Plymouth, Reo, Terraplane.* 2—Vertical suppressor in distributor block—*Chevrolet, Chrysler, DeSoto, Dodge, Graham, Plymouth.* 3—Condenser on ignition coil—*Auburn, Cadillac, Hudson, LaSalle, Packard 12, Terraplane.* 4—Condenser on Ford ignition coil. 5—Condenser on ammeter, Battery terminal—*Auburn, Buick, Chevrolet, LaFayette, Nash, Oldsmobile, Reo, Studebaker,* Registering terminal—*Pontiac.* 6—Vertical spark plug suppressor—*Auburn, Graham, LaSalle, Studebaker.* 7—Suppressor spliced in distributor cable—*Auburn, Cadillac, Hudson, Hupmobile, LaFayette, Nash, Packard, Reo, Studebaker, Terraplane.* 8—Double condenser on Chevrolet generator. 9—Condenser on generator, Battery terminal—*Auburn, Cadillac, Chrysler, DeSoto, Dodge, Ford, Hudson, Hupmobile, LaFayette, LaSalle, Nash, Packard, Plymouth, Reo, Studebaker, Terraplane.* Generator terminal—*Buick, Oldsmobile, Pontiac.* 10—Condenser on ignition switch—*Chrysler, DeSoto, Dodge, Graham, Packard 8, Plymouth.* 11—Condenser in dome light wire—*Chevrolet, Chrysler, DeSoto, Dodge, Hudson, Hupmobile, Oldsmobile, Plymouth, Pontiac, Reo, Studebaker, Terraplane.* 12—Horizontal suppressor in distributor block—*Buick, LaSalle, Oldsmobile, Pontiac.* 13—Bonding control wires through dash. 14—Ignition coil shield—*Oldsmobile, Pontiac.*

ALL 1934 closed cars are equipped with an antenna and a lead-in. When an antenna is fitted on open models or is available at the factory, it is shown in the table.

Before installing a receiver, the antenna should be checked with an extremely sensitive voltmeter, for high resistance leakage or short circuit. The voltmeter should be connected in series between a 6-volt battery and the antenna. Any reading over 1/10 volt indicates leakage that should be corrected. When the receiver is connected to the lead-in the surplus wire should be cut off to keep the lead-in as short as possible.

When drilling holes for mounting the set or when using one of the screws already on the car for a ground, clean all paint from around the holes to make sure of a good electrical connection.

The interference elimination recomded by the car manufacturers shown in the table will usually be sufficient but as conditions may vary on two cars of the same make and model, it is advisable to make a check before delivering the job. If interference is heard, determine whether it enters the set through the antenna by disconnecting the antenna lead-in from the receiver while the engine is running.

If the interference continues, with the antenna disconnected from the receiver, it is an indication that it is coming through the radio wiring. The speaker cable and battery cable should be relocated until the noise is reduced to a minimum. If this does not practically eliminate the interference, it will then be advisable to peen the distributor rotor arm to within .002" of the electrodes in the distributor block. Occasionally you may find a distributor cap which is out of round or with a short electrode. This condition does not affect the operation of the car, but sometimes makes satisfactory elimination impossible. If such a condition is found, the distributor cap should be replaced.

If the interference is eliminated by disconnecting the antenna from the receiver, it may be concluded that the interference is being picked up by the antenna. The following circuits should then be checked, providing of course, that they are not already fitted with a by-pass condenser: Dome light, head light, tail light, electric clock, ignition switch, generator, starting motor and ignition coil. To check these circuits, take a by-pass condenser and connect its lead to the hot side of the suspected unit. Ground the condenser case on a metal part of the car body or frame. After the source has been located, mount the condenser permanently.

When spark plug suppressors are specified, radio spark plugs with built-in suppressors can be used.

When connecting a condenser to the dome light circuit, splice the condenser lead into the dome light wire as far up the windshield post as possible. Solder and tape the joint. With the lead as short as possible, ground the condenser case on the dash, usually under the head of the bolts holding the instrument panel bracket.

The lead of the condenser in the generator circuit is attached to the battery terminal of the cutout relay. Ground the

condenser case to the generator frame by a screw which holds the cutout relay to the generator A generator whine which decreases in pitch as the engine slows down can often be eliminated by cleaning the commutator and reseating the brushes This noise can be isolated by speeding up the engine and then cutting off the ignition

Before connecting a condenser to the ignition coil, test each low tension terminal of the coil with a screwdriver while the engine is running One terminal will give off a slight high frequency spark while the other terminal will appear to be cold Connect the condenser lead to the cold terminal and ground the condenser case, usually to the coil mounting bracket Connecting the lead to the wrong terminal will seriously affect the car's operation and tend to make the engine noises more pronounced Reversing the primary leads will sometimes reduce engine noise, but the condenser must always be connected to the cold terminal

In some cases it may be necessary to solder a bond to the control wires and tubes where they enter the dash, grounding them securely under one of the dash grommet screws or soldering them to the dash Number 14 stranded and tinned copper wire can be used for this purpose Each wire or tube can be bonded separately or they may all be bonded together as shown in the illustration

Before making an installation, look up the car name for any special instructions not shown in the table

Buick . . . 1934—It is necessary to install a shield on the lead-in wire before connecting it to the receiver If the lead-in is tacked to the windshield lower cross bar, loosen it and then slide the shielded loom up over the lead-in in the corner post as far as possible so that it entirely covers the lead-in Ground the shield under the nut on the upper instrument panel bolt

A plastic compound may be found filling the space around the lead-in wire in the corner post A piece of brass tubing about 10 inches long should be used for shielding the portion of the lead in which passes through the compound Slip the brass tube approximately one inch into the upper end of the shielded loom and solder the pigtail of the loom to the tube A 20 inch length of wire should be soldered to the end of the lead-in and used to pull the lead-in wire through the tube

Connect the lead of the generator by pass condenser to the generator terminal of the cutout relay

Spark plug suppressors should not be used for they may actually increase interference noise

Cadillac and La Salle . . . 1934—Connect the lead of the by-pass condenser in the starting motor circuit to the generator terminal of the solenoid relay on the starting motor and ground the condenser case to one of the screws holding the solenoid relay to the starting motor

Chevrolet . . . 1934—A double by-pass condenser is installed on the generator One lead is connected to the generator terminal of the cutout relay and the other lead is connected to the terminal on the generator connected to lighting switch The condenser case is grounded under one of the screws holding the cutout relay to the generator frame.

Chrysler, DeSoto, Dodge and Plymouth . . . 1934—The condenser case attached to the dome light wire should be grounded to the cowl panel in front of the hood lining by drilling a 1/8 inch hole where the hood overlaps and as close to the pillar as possible Use a No 8/32 bolt and nut to make the connection

Ford . . . 1934—The by-pass condenser to be used at the fuse block can be connected underneath the bolt which holds the loom adjacent to the fuse block Connect the condenser lead to the terminal on either end of the fuse

Hudson and Terraplane . . . 1934—Connect the lead of the by-pass condenser in the gasoline gauge circuit to the battery terminal of the tank unit and ground the condenser case to the tank

Connect the lead of the by-pass condenser in the water level gauge circuit to the terminal in the center of the radiator unit and ground the condenser to one of the screws at the rim of the radiator unit

Oldsmobile . . . 1934—The lead-in should be shielded as described for Buick Do not ground the pigtail of the shielding until the set is installed Then turn on the receiver to full volume and set the dial at a point where no station is heard Now start the engine and let it run just slightly above idling speed Now make tests to note the condition which gives the least amount of spark noise interference Note the amount of noise with the pigtail not grounded Then hold the pigtail firmly against the bolt securing the instrument panel bracket to the corner post brace and note the noise Then hold the pigtail firmly against the upper left hand instrument panel bolt and note the noise Wrap the pigtail around the metal windshield wiper tube and note the noise

In case the best results are obtained when the pigtail is not grounded, clip it off as short as possible and cover the stub end with tape so that it will not contact any metal parts of the car If best results are obtained when the pigtail is grounded, clamp it where best results were obtained, being careful not to draw it too tight It should never be grounded to the lower instrument board bolt because it will be impossible to push the loom all the way up into the corner post and a length of unshielded wire will be exposed

Spark plug suppressors should never be used as they may actually increase interference noise

Connect the lead of the generator by pass condenser to the generator terminal of the cutout relay

Shield the ignition coil and high tension lead shield Remove the high tension lead from the coil Slip the shield over this lead so that the pigtail is nearest the dash Push the pigtail through the grommet, pulling it through to the engine side of the dash and clamp the pigtail under the head of the grommet bolt, after carefully cleaning the paint to insure a good ground Make the ground lead as short as possible Remove both clamp bolts from the coil shield and slip it over the high tension lead and its shield Since the battery terminal of the coil is hot, it is desirable to disconnect the ignition system lead wire from the starter relay terminal before mounting the shield Slip the shield over the end of the coil with the arched cutout directly over the top terminal of the coil Bring the slot in the bottom portion of the shield in position so that it straddles the bead on the lower side of the coil Tighten the shield clamp screws so that the shield makes a good mechanical and electrical connection to the coil case and to prevent the shield from turning

Care must be taken that none of the coil leads are too tightly drawn against the shield and that the position of the shield does not present a possible danger of short circuiting the ignition system

Due to the high voltage developed across the secondary of the ignition coil, considerable corona may occur at the terminal end of the coil This will cause considerable interference which may be increased when suppressors are used on the spark plugs Therefore it is desirable to resort to shielding and bonding where necessary rather than to add suppressors Care should be taken when installing the "lead shield" and the "coil shield" that the end of the shield is pushed up over the end of the bakelite terminal of the coil and that the leads are so arranged as to permit a minimum pick-up interference

A shielded low tension wire should replace the original lead from the ignition coil to the distributor After the connections are made, a pigtail should be soldered to the shield braid at a point where the wire enters the engine compartment as near to the grommet as possible This pigtail should then be grounded to the dash at the nearest point, preferably by soldering

A piece of 3/8" wide flexible copper braid 10½" to 11" long should be secured for bonding Cut off one piece about 3½ inches long and bond the steering column to the dash at the point where it passes through the dash on the engine side This bonding strip should be cut and soldered in place and cut as short as possible except for a small loop to allow for some movement between the bonded parts The remaining length of braid should be used as a bond between the support bracket on the exhaust side of the engine immediately below the dash It is recommended that two 3/8" holes be punched in the ends of the piece of braid and then the entire end of the braid soldered over to make a good, hard terminal This binding strip is then to be mounted under the top bolt which mounts the exhaust pipe bracket and the other end is secured under the top bolt securing the engine support bracket When these bolts are removed to attach the bonding strip care should be taken to see that all the paint is removed from the under side of the bolt head and from the area under the bolt which will be covered by the strip

Pontiac . . . 1934—The lead-in should be shielded as described for the Buick The ignition coil and its high tension lead should be shielded as described for Oldsmobile The low tension lead from the coil to the distributor should also be shielded as described for Oldsmobile It should be laced in behind the high tension suspension brackets next to the engine block The lead can be taped at two or three points to prevent it from coming too close to the high tension lead

Spark plug suppressors should not be used as they may actually increase interference noise

Connect the lead of the generator by-pass condenser to the generator terminal of the cutout relay

The ammeter by pass condenser is connected to the registering terminal

INSTALLATION CHART

Car Name	Battery terminal grounded	Antenna fitted on open models	Lead-in location	Suppressor location	By-pass condenser location
Auburn	P	Optional	Right	Spark plugs Distributor	Ignition coil, ammeter, generator
Buick	N	Yes	Left	Distributor	Ammeter, generator
Cadillac	P	Yes	Left	Spark plugs Distributor	Ignition coil, generator, starting motor
Chevrolet	N	Optional	Left	Distributor	Ammeter, generator, dome light
Chrysler 6	P	Optional	Right	Spark plugs Distributor	Generator, dome light, ignition switch
Chrysler 8's	P		Right	Spark plugs Distributor	Generator, dome light, ignition switch
De Soto	P		Right	Spark plugs Distributor	Generator, dome light, ignition switch
Dodge	P	Optional	Right	Spark plugs Distributor	Generator, dome light, ignition switch
Ford	P	Optional	Left	Spark plugs	Ignition coil, generator, fuse block or ignition switch
Graham	P	Yes	Left	Spark plugs Distributor	Ignition switch
Hudson	P	Yes	Left	Spark plugs Distributor	Ignition coil, generator, dome light, gasoline gauge, water gauge
Hupmobile 417	P	Optional	Left	Spark plugs Distributor	Generator, dome light, starting motor
Hupmobile 421, 429	P	Optional	Right	Spark plugs Distributor	Generator, dome light, starting motor
La Fayette	P	Optional	Left	Spark plugs Distributor	Ammeter, generator
La Salle	P	Yes	Left	Spark plugs Distributor	Ignition coil, generator, starting motor
Nash	P	Optional	Left	Spark plugs Distributor	Ammeter, generator
Oldsmobile	N	Yes	Left	Distributor	Ammeter, generator, dome light
Packard 8's	P	Optional	Right	Spark plugs Distributor	Generator, ignition switch
Packard 12	P	Optional	Right	Spark plugs Distributor	Ignition coil, generator
Plymouth	P	Optional	Right	Spark plugs Distributor	Generator, dome light, ignition switch
Pontiac	N	Yes	Left	Distributor Spark plugs	Ammeter, generator, dome light
Reo	N		Right	Distributor	Ammeter, generator, dome light
Studebaker	P	Optional	Left	Spark plugs Distributor	Ammeter, generator, dome light
Terraplane	P	Yes	Left	Spark plugs Distributor	Ignition coil, generator, dome light, gasoline gauge, water gauge

VACUUM CLUTCH . . .

AN IMPROVED type of Bendix automatic clutch control is used on Chrysler, DeSoto, Dodge, Hudson, Plymouth and Terraplane cars. The compensator valve, by which the adjustment is maintained independent of clutch facing wear, is a new feature on the vacuum clutch control unit.

The source of power is the vacuum in the intake manifold, with a tubing connection to the control valve. The control valve contains the control plunger, which cuts in or out the entire system by means of the control button on the dash, and the accelerator plunger which is connected to the throttle system and controls the movement of the clutch.

A lost motion link is introduced into the throttle linkage to permit a small overtravel of the accelerator beyond its ordinary idle position. Clutch disengagement then becomes automatic when the accelerator is completely released and clutch engagement is accomplished as the accelerator is again depressed.

The accelerator plunger moves outward as the accelerator is released, and finally opens the port through the control valve when the accelerator is completely released. This opens a direct vacuum passage from the manifold to the vacuum chamber and the piston is drawn forward, disengaging the clutch. As the piston moves forward, air is drawn into the atmospheric chamber through the atmospheric check valve, eliminating any back pressure or lag in the clutch disengagement stroke.

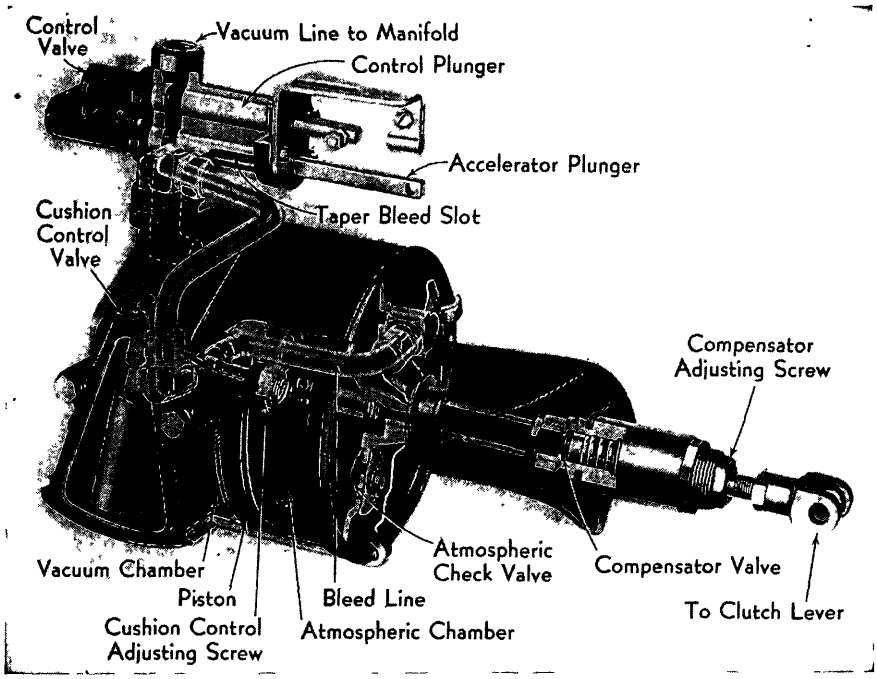
During clutch release, the clutch spring load is imposed on the piston rod, opening the compensating valve against the closing pressure of its spring. This creates an additional air passage to the atmospheric chamber to improve the action.

After gear shifting, as the accelerator is again depressed, the accelerator plunger is immediately moved inward sufficiently to close the vacuum port to the manifold before the carburetor butterfly opens, due to the lost motion link in the throttle linkage. At the same time, a slot in the accelerator plunger admits air into the vacuum chamber, breaking the vacuum so that there will be no back pressure to interfere with clutch engagement.

As the clutch engages, air is expelled from the atmospheric chamber through the hollow piston rod and the open compensator valve. As the clutch spring load decreases the compensator valve gradually closes until it is completely sealed when the clutch plate makes initial contact. The trapped air in the atmospheric chamber momentarily halts further clutch engagement, forming what is known as the cushion point.

Final engagement of the clutch is controlled by the escape of air through the bleed line from the atmospheric chamber through the cushion control valve, when one is fitted, and into the control valve body.

As the accelerator is further depressed to speed up the engine, a tapered slot in the accelerator plunger passes the bleed line port, permitting additional air escape and final cushioned engagement of the clutch. The farther the accelerator is depressed, the greater the slot area exposed to the bleed line and the faster the final engagement. This prevents excessive slipping on high speed starts.



The cushion control is fitted to further control high speed starts and is on Chrysler, DeSoto, Dodge and Plymouth cars. It is a spring loaded pendulum valve mounted in the bleed line. If the car has any tendency to surge or lurch during high speed starts the pendulum will swing backwards, completely closing the bleed line. This arrests clutch engagement momentarily, permitting the car speed to gradually attain engine speed.

Adjustments . . . Before adjusting the clutch control unit be positive that the clutch is properly adjusted and functioning properly. The clutch cross shaft must be free. The carburetor should be adjusted so that the engine idles smoothly and at correct idling speed.

Adjust the clutch pedal so that it has 1⅛" free travel. Then with the clutch pedal depressed so that its free travel is just taken up, adjust the stop screw at the base of the lever connected to the piston rod to give ⅛" clearance. Use a gauge to determine this dimension, for this clearance is necessary to provide clutch release bearing clearance, even with the automatic clutch control unit locked out.

Lost motion in the throttle system must be adjusted so that the piston moves to its cushion point just as the engine begins to accelerate. The normal clearance is 3/16". Too much lost motion will cause stalling on low throttle starts while too little lost motion will cause the clutch to disengage when the car is driven at idling speed. The accelerator linkage must be well lubricated and completely free.

Drive the car with normal accelerator operation. If the clutch is rough or jerky with low throttle starts, loosen the compensator lock nut and turn the compensator adjusting screw clockwise a quarter of a turn at a time until smooth operation is obtained. If the clutch slips on low throttle starts, turn the compensator adjusting screw counterclockwise a quarter turn at a time until correct. When once properly set, the compensator should retain its correct adjustment throughout the life of the clutch facings.

Make a test with wide open throttle starts. If rough, remove the cover from the bottom of the cushion control valve and check the pendulum for free movement. Adjustment is made by loosening the lock nut and turning the cushion control adjusting screw counterclockwise one turn at a time. If clutch slips on wide open throttle starts, turn the cushion control adjusting screw clockwise.

Leakage Tests . . . Push the accelerator plunger in just enough to break the vacuum in the vacuum chamber but not enough to register the bleed slot. If the piston engages to its cushion point and stops for two seconds or more, the entire system is okeh. If the piston passes its cushion point without hesitation a leak is indicated. Tighten all fittings, lubricate cylinder thoroughly, disconnecting piston rod clevis and rotating piston. Repeat test and if leakage remains, isolate control valve by holding cushion control pendulum against its rear stop and repeat the test. If the piston now stops at its cushion point, leakage is in the control valve. If it does not stop, the leak is in the cushion control or the cylinder.

Isolate the cushion control by disconnecting the bleed tube at the cylinder or at its entry to the cushion control. Seal the tube with your finger and repeat the test. If the piston stops, leakage is in the cushion control. If it does not stop, the leak is in the cylinder.

If the piston stops at its cushion point when the vacuum connection to the cylinder is sealed with your finger and the piston is drawn out by hand, the leak is around the piston rod seal, at the end plate gasket, atmospheric check valve or compensator valve. If it does not stop, leakage is past the piston packing.

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Major Specifications

1935

MAKE AND MODEL	Price cheapest 5-passenger 4-door sedan	Engine make and model	No. of cylinders and valve arrangement	Bore and stroke	Piston displacement	Taxable H. P.	Maximum brake H. P.	Gearratio5-passenger 4 door sedan	Wheel-Base
Auburn 653	795	LycWF	6L	3 1/16x4 3/4	209 9	22 51	85@3500	4 44	120
Auburn 851	1045	LycGG	8L	3 1/16x4 3/4	279 9	30 00	115@3600	4 08	127
Austin 4	345	Own	4L	2 2x3	45 6	7 78	13@3200	5 25	75
Buick 40	895	Own	8I	3 3/32x3 7/8	233 0	30 63	93@3200	4 33	117
Buick 50	1195	Own	8I	2 31/32x4 1/4	235 3	28 20	88@3200	4 89	119
Buick 60	1425	Own	8I	3 3/32x4 5/8	278 1	30 63	100@3200	4 70	128
Buick 90	1945	Own	8I	3 5/16x5	344 8	35 12	116@3200	4 36	136
Cadillac V8	2445	Own	8L	3 9/16x4 1/8	353 0	36 45	130@3400	4 60	C
Cadillac V12	3995	Own	12I	3 1/2x4	368 0	46 90	150@3600	4 80	146
Cadillac V16	7000	Own	16I	3x4	452 0	57 50	185@3800	4 64	154
Chevrolet Std 6	550	Own	6I	3 5/16x4	206 8	26 30	74@3200	4 11	107
Chevrolet Mast 6	640	Own	6I	3 7/16x4	206 8	26 30	80@3300	4 11	113
Chrysler 6AS	830	Own	6L	3 9/16x4 1/2	241 6	27 34	93@3400	4 13	118
Chrysler 8AS	975	Own	8L	3 1/4x4 1/8	273 8	33 80	105@3400	3 91	121
Chrysler 8AF	1395	Own	8L	3 1/4x4 7/8	323 5	33 80	115@3400	4 10	123
Chrysler Imp 8AF	1675	Own	8L	3 1/4x4 7/8	323 5	33 80	130@3400	4 30	128
Chrysler IC8AF-137		Own	8L	3 1/4x4 7/8	323 5	33 80	130@3400	4 30	137
Chrysler IC8AF-146		Own	8L	3 1/2x5	384 8	39 20	150@3200	4 42	146
DeSoto 6AS	795	Own	6L	3 9/16x4 1/2	241 6	27 34	93@3400	3 89	116
DeSoto 6AF	1195	Own	6L	3 9/16x4 1/2	241 5	27 34	100@3400	4 10	115 1/2
Dodge 6	735	Own	6L	3 1/4x4 3/8	217 8	25 35	87@3600	4 13	116
Duesenberg 8		Own	8O	3 3/4x4 3/4	420 0	45 00	265@4200	6	143-54
Ford V8	575	Own	8L	3 1/16x3 3/4	221 0	30 00	90@3800	4 11	112
Graham 6	635	Own	6L	3x4	169 6	21 60	60@5300	4 45	111
Graham Spc 6	845	Own	6L	3 1/4x4 1/2	224 0	25 35	85@3400	4 27	116
Graham 8	925	Own	8L	3 1/8x4	245 4	31 25	95@3400	4 27	123
Graham Super C8	1145	Own	8L	3 1/4x4	265 4	33 80	140@4000	4 27	123
Hudson Big 6	770	Own	6L	3x5	212 1	21 60	03@3800	4 11	116
Hudson 8	840	Own	8L	3x4 1/8	254 5	28 80	113@3800	4 11	117,24
Hupmobile 518	695	Own	6L	3 1/2x3 7/8	224 0	29 42	91@3500	4 36	118
Hupmobile 521	1095	Own	6L	3 1/2x4 1/4	245 3	29 42	101@3600	4 45	121
Hupmobile 527	1395	Own	8L	3 3/16x4 3/4	303 2	32 51	120@3500	4 45	127 1/2
LaFayette 6	670	Own	6L	3 1/4x4 3/8	217 8	25 35	75@3200	4 70	113
LaSalle 8	1695	Own	8L	3x4 1/4	240 3	28 80	95@3600	4 78	119
Lincoln V12	3400	Own	12L	3 1/8x4 1/2	414 0	46 80	150@3400	4 58	136,45
Nash Adv 6	945	Own	6I	3 9/16x4 3/8	234 8	27 34	88@3200	4 40	120
Nash Adv Amb 8	1165	Own	8I	3 1/8x4 1/4	260 8	31 25	100@3400	4 10	125
Oldsmobile 6	790	Own	6L	3 5/16x4 1/8	213 3	26 30	90@3400	4 44	115
Oldsmobile 8	940	Own	8L	3x4 1/4	240 3	28 80	100@3400	4 44	121
Packard 120	1060	Own	8L	3 1/4x3 7/8	257 2	33 80	110@3850	4 36	120
Packard 8	2385	Own	8L	3 3/16x5	320 0	32 50	130@3200	4 69	127,34,9
Packard Super 8	2990	Own	8L	3 1/2x5	384 8	39 20	150@3200	4 41	132,9,44
Packard 12	3960	Own	12L	3 7/16x4 1/4	473 0	56 70	175@3200	4 41	139,44
Pierce-Arrow 845	2895	Own	8L	3 1/2x5	385 0	39 20	140@3400	4 23	138,44
Pierce-Arrow 1245	3295	Own	12L	3 1/2x4	462 0	58 80	175@3400	4 21	138,44
Pierce-Arrow 1255	4295	Own	12L	3 1/2x4	462 0	58 80	175@3400	4 21	147
Plymouth 6	660	Own	6L	3 1/8x4 3/8	201 3	23 44	82@3600	4 13	113
Pontiac 6	660	Own	6L	3 9/16x3 7/8	208 0	27 34	80@3600	4 44	112
Pontiac 8	715	Own	8L	3 3/16x3 1/2	223 4	32 52	84@3800	4 55	116 5/8
Reo 6A	845	Own	6L	3 9/16x4 1/4	228 0	27 34	85@3400	4 27	115
Reo S	985	Own	6L	3 9/16x5	268 0	27 34	85@3200	4 30	118
Studebaker Dict 6	750	Own	6L	3 1/4x4 1/8	205 3	25 40	88@3600	4 55	114
Studebaker Com 8	985	Own	8L	3 1/16x4 1/4	250 4	30 00	107@3800	4 45	119
Studebaker Pres 8	1330	Own	8L	3 1/16x4 1/4	250 4	30 00	110@3600	4 73	123
Stutz SV16	3095	Own	8O	3 9/16x4 1/2	322 0	36 40	113@3300	4 75	134 1/2,45
Stutz DV32	3795	Own	8O	3 9/16x4 1/2	322 0	36 40	156@3900	4 50	134 1/2,45
Terraplane 6	655	Own	6L	3x5	212 1	21 60	88@3800	4 11	112
Willys 77	415	Own	4L	3 1/8x4 3/8	134 2	15 63	48@3200	4 30	100

1934

MAKE AND MODEL	Price cheapest 5-passenger 4-door sedan	Engine make and model	No. of cylinders and valve arrangement	Bore and stroke	Piston displacement	Taxable H. P.	Maximum brake H P.	Gearratio5-passenger 4-door sedan	Wheel-base
Auburn Std 6-52	745	LycWF	6L	3 1/16x4 3/4	209 9	22 50	85@3500	4 60	119
Auburn Cust 6-52	845	LycWF	6L	3 1/16x4 3/4	209 9	22 50	85@3500	4 60	119
Auburn Std 8-50	995	LycGF	8L	3 1/16x4 3/4	279 9	30 02	100@3400	4 45	126
Auburn Cust 8-50	1125	LycGG	8L	3 1/16x4 3/4	279 9	30 02	115@3600	a	126
Auburn 12-165	1645	LycBB	12 H	3 1/16x4 1/4	391 0	46 80	160@3400	e	133
Austin	295	Own	4L	2 2x3	45 6	7 78	13@3200	5 25	75
Buick 34-50	1125	Own	8I	2 31/32x4 1/4	235 3	28 20	88@3200	4 89	119
Buick 34-60	1345	Own	8I	3 3/32x4 5/8	278 1	30 63	100@3200	4 70	128
Buick 34 90	1845	Own	8I	3 5/16x5	344 8	35 12	116@3200	4 36	136
Cadillac V8	2495	Own	8I	3 9/16x4 1/8	353 0	36 45	130@3400	4 60	C
Cadillac V12	4445	Own	12I	3 1/2x4	368 0	46 0	150@3600	4 80	146
Cadillac V16	6650	Own	16I	3x4	452 8	57 50	185@3800	4 64	154
Chevrolet Std 6	495	Own	6I	3 7/16x3 1/2	181 0	26 30	60@3000	4 11	107
Chevrolet Mast 6	645	Own	6I	3 7/16x4	206 8	26 30	80@3300	4 11	112
Chrysler 6	795	Own	6L	3 9/16x4 1/2	241 6	27 34	93@3400	4 11	118
Chrysler 8	1245	Own	8L	3 1/4x4 1/2	298 6	33 80	112@3400	4 10	123
Chrysler Imp 8	1495	Own	8L	3 1/4x4 7/8	323 5	33 80	130@3400	4 10	128
Chrysler Imp Cust 8		Own	8L	3 1/2x5	384 8	39 20	145@3200	4 14	146
Continental 4	495	Own	4L	3 9/16x4	143 1	18 22	38@2600	4 33	101 1/2
DeSoto 6	995	Own	6L	3 9/16x4 1/2	241 5	27 34	100@3400	4 11	115
Dodge 6	695	Own	6L	3 1/4x4 3/8	217 8	25 35	82@3600	4 37	117-21
Duesenberg		Own	8O	3 3/4x4 3/4	420 0	45 00	265@4200	b	143-54
Ford V8	575	Own	8L	3 1/16x3 3/4	220 0	30 00	92@3900	4 11	112
Franklin Olympic 6	1435	Own	6I	3 1/2x4 3/4	274 0	29 40	100@3100	4 30	118
Franklin Airman 6	2185	Own	6I	3 1/2x4 3/4	274 0	29 40	100@3100	4 73	132
Franklin V12	2885	Own	12I	3 1/4x4	298 0	50 80	150@3100	4 45	144
Graham 6	745	Own	6L	3 1/4x4 1/2	224 0	25 35	85@3400	4 27	116
Graham 8	1015	Own	8L	3 1/8x4	245 4	31 25	95@3400	4 27	123
Graham Cust 8	1295	Own	8L	3 1/4x4	265 4	33 80	135@4000	4 27	123
Hudson 8	785	Own	8L	3x4 1/2	254 5	28 80	108@3800	4 01	116-23
Hupmobile 417	795	Own	6L	3 1/2x3 7/8	224 0	29 4	80@3400	4 36	117
Hupmobile 421 421A	795	Own	6L	3 9/16x4 1/4	228 1	27 34	90@3400	4 73	121
Hupmobile 421J	1095	Own	6L	3 1/2x4 1/4	245 3	29 4	93@3400	4 45	121
Hupmobile 422	1045	Own	8L	3x4 5/8	261 5	28 80	96@3600	4 36	122
Hupmobile 426	1145	Own	8L	3 1/8x4 3/4	303 2	32 51	109@3500	4 36	126
Hupmobile 427	1245	Own	8L	3 3/16x4 3/4	303 2	32 51	115@3500	4 45	127
Lafayette Nash Bit	695	Own	6L	3 1/4x4 3/8	217 8	25 35	75@3200	4 70	113
LaSalle 8	1595	Own	8L	3x4 1/4	240 3	28 80	90@3700	4 78	119
Lincoln V12-136, 145	3400	Own	12L	3 1/8x4 1/2	414 0	46 80	150@3400	4 58	136-45
Nash Big 6	785	Own	6I	3 9/16x4 3/8	234 8	27 34	88@3200	4 44	116
Nash Advanced 8	1065	Own	8I	3 1/8x4 1/4	260 8	31 25	100@3400	4 10	121
Nash Ambassador 8	1575	Own	8I	3 9/16x4 1/2	322 0	36 45	125@3600	4 43	133-42
Oldsmobile 6	730	Own	6L	3 5/16x4 1/8	213 3	26 30	84@3250	4 56	114
Oldsmobile 8	925	Own	8L	3x4 1/4	240 3	28 80	90@3350	4 78	119
Packard 8	2350	Own	8L	3 3/16x5	320 0	32 50	120@3200	4 36	129-36
Packard Super 8	2950	Own	8L	3 1/2x5	384 8	39 20	145@3200	4 69	135-57
Packard 12	3960	Own	12L	3 7/16x4	445 5	56 70	160@3200	4 69	142-7
Pierce-Arrow 840A	2895	Own	8L	3 1/2x5	385 0	39 20	140@3400	4 23	138-44
Pierce-Arrow 1240A	3295	Own	12L	3 1/2x4	462 0	58 80	175@3400	4 21	138-44
Pierce-Arrow 1248A	4295	Own	12L	3 1/2x4	462 0	58 80	175@3400	4 21	147
Plymouth 6	585	Own	6L	3 1/8x4 3/8	201 3	23 44	77@3600	4 11	108-14
Pontiac 8	785	Own	8L	3 3/16x3 1/2	223 4	32 52	84@3600	4 55	117 1/4
Reo 6S	795	Own	6L	3 9/16x5	268 0	27 34	85@3200	4 30	118
Reo Royale 8	1745	Own	8L	3 9/16x5	258 0	36 48	125@3300	4 42	131-35
Studebaker Dict 6	695	Own	6L	3 1/4x4 1/8	205 3	25 40	88@3600	4 55	114
Studebaker Com 8	895	Own	8L	3 1/16x3 3/4	221 0	30 00	103@4000	4 82	119
Studebaker Pres 8	1095	Own	8L	3 1/16x4 1/4	250 4	30 00	110@3600	4 70	123
Stutz SV16	2995	Own	8O	3 9/16x4 1/2	322 0	36 40	113@3300	4 75	134-45
Stutz DV32	3695	Own	8O	3 9/16x4 1/2	322 0	36 40	156@3900	4 75	134-45
Terraplane 6	650	Own	6L	3x5	212 1	21 60	80@3600	4 01	112-16

a — 3 47 and 5 00
b — 3 04 and 4 55
c — 3 78, 4 08, 4 58, 4 30
C—128, 136, 146
I — "I" Head with rocker arms and long push rods
L — L-Head
Lyc — Lycoming
O — Overhead camshaft

Major Specifications

1933

MAKE AND MODEL	Price cheapest 5-passenger 4-door sedan	Engine make and model	No. of cylinders and valve arrangement	Bore and stroke	Piston displacement	Taxable H. P.	Maximum brake H P.	Gearratio5-passenger 4-door sedan	Wheelbase
Auburn 8-101	845	LycGU	8L	3x4¾	268 6	28 80	100@3400	4 70	127
Auburn 8-105	1245	LycGU	8L	3x4¾	268 6	28 80	100@3400	3 40	127
Auburn 12-161	1245	LycBB	12 H	3⅛x4½	391 0	46 80	160@3400	4 08	133
Auburn 12-165	1745	LycBB	12 H	3⅛x4½	46 80	46 80	160@3400	3 04	133
Austin	275	Own	4L	2 2x3	45 6	7 78	13@3200	5 25	75
Buick 33-50	1045	Own	8I	2 11/16x4½	230 4	27 61	86@3200	4 70	119
Buick 33-60	1810	Own	8I	3 1/16x4⅝	272 6	30 02	97@3200	4 60	127
Buick 33-80	1570	Own	8I	3 5/16x5	344 8	35 12	113@3200	4 27	130
Buick 33 90	1805	Own	8I	3 5/16x5	344 8	35 12	113@3200	4 36	138
Cadillac V8	2895	Own	8L	3⅜x4 11/16	353 0	36 45	115@3000	4 60	134-40
Cadillac V12	3595	Own	12I	3½x4	368 0	46 90	135@3400	4 80	134-40
Cadillac V16		Own	16I	3x4	452 8	57 50	165@3400	4 64	143-49
Chevrolet	565	Own	6I	3 3/16x4	206 8	26 30	65@2800	4 11	110
Chrysler 6	845	Own	6L	3¼x4½	224 0	25 35	83@3400	4 38	117
Chrysler Royal 8	995	Own	8L	3¼x4⅛	273 8	33 80	90@3400	4 30	120
Chrysler Imperial 8	1395	Own	8L	3¼x4½	298 6	33 80	108@3400	4 30	126
Chrysler Imp Cust 8	2895	Own	8L	3½x5	384 8	39 20	135@3200	4 10	146
Continental 4	395	Own	4L	3⅝x4	143 1	18 22	40@2800	4 33	101½
Continental Light 6	535	Own	CL	3x4	169 6	21 60	65@3500	4 33	107
Continental Big 6	745	Own	6L	3⅝x4	214 7	27 34	85@3600	4 30	114
Cord	2395	LycFDA	8L	3¼x4½	298 6	33 80	115@3300	4 80	137
Cunningham		Own	8L	3⅞x5	471 0	48 00	140@2800	4 25	142
DeSoto 6	765	Own	6L	3¼x4⅜	217 8	25 35	79@3400	4 38	114½
Dodge 6	670	Own	6L	3⅛x4⅜	201 3	23 44	75@3600	4 38	111¼
Dodge 8	1145	Own	8L	3¼x4½	282 1	33 80	100@3400	4 30	122
Duesenberg		Own	8O	3⅜x4¾	420 0	45 00	265@4200	b	143-54
Essex Terraplane 6	565	Own	6L	2 1/16x4¾	193 1	20 70	70@3200	4 56	106
Essex Terraplane 8	725	Own	8L	2 1/16x4½	244 0	27 60	94@3200	4 56	113
Ford B	540	Own	4L	3⅞x4¼	200 5	24 03	50@2800	4 11	106
Ford V8	590	Own	8L	3 1/16x3⅜	221 0	30 00	65@3400	4 11	106
Franklin Olympic 6	1385	Own	6I	3½x4⅜	274 0	29 40	100@3100	4 30	118
Franklin 6	1935	Own	6I	3½x4⅜	274 0	29 40	100@3100	4 73	132
Franklin 12	2885	Own	12I	3¼x4	398 0	50 80	150@3100	4 45	144
Graham Std 6	795	Own	6L	3¼x4½	224 0	25 35	85@3400	4 27	
Graham Std 8	895	Own	8L	3½x4	245 4	31 25	95@3400	4 27	
Graham Cust 8	1095	Own	8L	3½x4	245 4	31 25	95@3400	4 27	
Hudson Super 6	865	Own	6L	2 11/16x4¾	193 1	20 70	73@3200	4 64	113
Hudson 8	1145	Own	8L	3x4½	254 1	28 80	101@3600	4 64	119-32
Hupmobile 321	995	Own	6L	3⅝x4¼	228 1	27 34	90@3800	4 73	121
Hupmobile 322	1145	Own	8L	3x4⅝	261 5	28 80	93@3600	4 36	122
Hupmobile 326	1445	Own	8L	3 3/16x4¾	303 2	32 51	109@3500	4 36	126
LaSalle	2245	Own	8L	3⅜x4 11/16	353 0	36 45	115@3000	4 60	130-36
Lincoln V12-136	3200	Own	8L	3½x5	384 0	39 20	125@2900	4 58	136
Lincoln V12-145	4400	Own	12L	3¼x4½	448 0	50 70	150@3400	4 58	145
Marmon 16	4825	Own	16I	3½x4	490 8	62 50	200@3400	3 78	145
Nash Big 6	745	Own	6L	3¼x4⅜	217 7	25 35	75@3200	4 70	116
Nash Standard 8	830	Own	8L	3x4⅜	247 4	28 80	80@3200	4.44	116
Nash Special 8	975	Own	8L	3x4⅜	247 4	28 80	85@3200	4 44	121
Nash Advanced 8	1320	Own	8I	3⅛x4¼	260 8	31 25	100@3400	4 71	128
Nash Amb 8	1595	Own	8I	3⅝x4¼	322 0	36 45	125@3600	4 50	132-42
Oldsmobile 6	825	Own	6L	3⅝x4⅛	221 4	27 34	80@3200	4 56	115
Oldsmobile 8	925	Own	8L	3x4¼	240 3	28 80	90@3350	4 56	119
Packard 8	2150	Own	8L	3 3/16x5	320 0	32 50	120@3200	4 69	127-36
Packard Super 8	2750	Own	8L	3½x5	384 8	39 20	145@3200	4 69	135-42
Packard 12	3860	Own	12L	3 7/16x4	445 5	56 70	160@3200	4 69	142-47
Pierce-Arrow 836	2575	Own	8L	3½x4½	366 0	39 20	135@3400	4 28	136-9
Pierce-Arrow 1236	2975	Own	12L	3⅝x4	429 0	54 60	160@3400	4 43	136-9
Pierce-Arrow 1242, 47	3785	Own	12L	3½x4	462 0	58 80	175@3400	4 58	137-42
Plymouth 6	545	Own	6L	3⅛x4⅛	189 9	23 44	70@3600	4 38	107
Pontiac 8	695	Own	8L	3 3/16x3½	223 4	32 52	75@3600	4 44	115
Reo S	995	Own	6L	3⅝x5	268 0	27 34	85@3200	4 30	117
Reo Royale		Own	8L	3⅝x5	358 0	36 48	125@3300	4 42	131
Rockne Six	635	Own	6L	3⅛x4⅛	189 8	23 40	70@3200	4 55	110
Studebaker 6	915	Own	6L	3¼x4⅝	230 0	25 40	85@3200	4 36	117
Studebaker Com 8	1075	Own	8L	3 1/16x4	236 0	30 00	100@3800	4 36	117
Studebaker Pres 8	1385	Own	8L	3 1/16x4¼	250 4	30 00	110@3600	4 73	125
Studebaker Spd Pres 8	1685	Own	8L	3¼x4⅜	337 0	39 20	132@3400	4 31	135
Stutz LAA	1895	Own	6O	3⅜x4½	241 5	27 34	85@3100	4 75	127½
Stutz SV16	2995	Own	8O	3⅜x4½	322 0	36 40	113@3300	4 75	134-45
Stutz DV32	3675	Own	8O	3⅜x4½	322 0	36 40	156@3900	4 50	134-45
Willys 77	445	Own	4L	3⅛x4⅜	134 2	15 63	48@3200	4 30	100
Willys 99	675	Own	6L	3 1/16x4⅛	213 3	26 33	80@3400	4 40	113

1932

MAKE AND MODEL	Price cheapest 5-passenger 4-door sedan	Engine make and model	No of cylinders and valve arrangement	Bore and stroke	Piston displacement	Taxable H P	Maximum brake H P.	Gearratio5-passenger 4-door sedan	Wheelbase
Auburn 8-100	945	LycGU	8L	3x4¾	268 6	28 80	98@3400	4 70	127-36
Auburn 12-160	1445	LycBB	12L	3⅛x4¼	391 0	46 90	160@3400	4 00	132
Austin	395	Own	4L	2 2x3	45 6	7 78	13@3200	5 25	75
Buick 32-50	995	Own	8I	2 11/16x4¼	230 4	27 61	78@2200	4 60	114
Buick 32-60	1310	Own	8I	3 1/16x4⅝	272 6	30 02	90@3000	4 55	118
Buick 32-80	1570	Own	8I	3 5/16x5	344 8	35 12	104@2900	4 27	126
Buick 2-90	1805	Own	8L	3 5/16x5	344 8	35 12	104@2900	4 36	134
Cadillac V8	2895	Own	8L	3⅜x4 11/16	353 0	36 45	115@3000	4 60	134-40
Cadillac V12	3595	Own	12I	3½x4	368 0	46 90	135@3400	4 80	134-40
Cadillac V16	4595	Own	16I	3x4	452 8	57 50	165@3500	4 64	143-49
Chevrolet	635	Own	6I	3 1/16x3¾	194 0	26 30	60@3000	4 10	109
Chrysler 6	895	Own	6L	3¼x4½	224 0	25 35	82@3400	4 60	116
Chrysler 8	1475	Own	8L	3¼x4½	298 7	33 80	100@3400	4 30	125
Chrysler Imp 8	1945	Own	8L	3½x5	384 8	39 20	125@3200	4 10	135
Chrysler Imp Cust 8	2995	Own	8L	3½x5	384 8	39 20	125@3200	4 10	146
Cord 8	2395	LycFDA	8L	3¼x4½	298 6	33 80	115@3300	4 80	137
Cunningham		Own	8L	3⅞x5	471 0	48 00	140@2800	4 25	142
DeSoto 6	775	Own	6L	3¼x4¼	211 5	25 35	75@3400	4 62	113
DeVaux 6-75	685	Cont	6L	3⅜x4	214 7	27 34	79@3400	4 40	113
Dodge 6	845	Own	6L	3¼x4⅜	217 8	25 35	79@3400	4 60	114
Dodge 8	1145	Own	8L	3¼x4¼	282 1	33 80	90@3400	4 10	121½
Duesenberg		Own	8O	3⅜x4¾	420 0	45 00	265@4200	b	143-54
Durant 619	600	Con22A	6L	3¼x4	199 0	25 40	71@3300	3 90	109
Essex	775	Own	6L	2 11/16x4¾	193 1	20 70	70@3200	4 63	113*
Ford A	590	Own	4L	3⅞x4½	205 5	24 03	40@2200	3 77	103½
Franklin	2310	Own	6I	3½x4¾	274 0	29 40	100@3100	4 73	125-32
Graham 6	795	Own	6L	3½x4½	207 0	23 44	70@3200	4 45	113
Graham 8	1045	Own	8L	3½x4	245 4	31 25	90@3400	4 30	123
Hudson 8	1095	Own	8I	3x4½	254 1	28 80	101@3600	4 63	219-16
Hupmobile 214	795	Own	6I	3¼x4¼	211 5	25 35	70@3200	4 70	113½
Hupmobile 216	995	Own	6L	3⅜x4¼	228 1	27 34	75@3200	4 55	116
Hupmobile 218	995	Own	8L	2⅞x4⅝	240 2	26 45	90@3200	4 55	118
Hupmobile 221	1195	Own	8L	3x4¾	268 6	28 80	100@3200	4 55	121
Hupmobile 222	1295	Own	8L	2 11/16x4⅝	250 7	27 61	93@3200	4 36	122
Hupmobile 225	1455	Own	8L	3½x4¾	365 6	39 20	133@3400	4 08	125
Hupmobile 226	1595	Own	8L	3 1/16x4¾	279 9	30 01	103@3200	4 36	126
Hupmobile 237	1695	Own	8L	3½x4¾	365 6	39 20	133@3400	4 08	137
LaSalle	2495	Own	8L	3⅜x4 11/16	353 0	36 45	115@3000	4 60	130-36
Lincoln 12	4600	Own	12L	3¼x4½	448 0	50 70	150@3400	4 58	145
Marmon 8-125	1395	Own	8L	3¼x4¾	315 2	33 80	125@3400	4 08	125
Marmon 16	5700	Own	16I	3½x4	490 8	62 50	200@3400	3 78	145
Nash 960	795	Own	6L	3⅛x4⅜	201 3	23 40	65@2800	4 73	114¼
Nash 970	955	Own	8L	2⅞x4⅝	227 2	26 40	78@3200	4 73	116¼
Nash 980	1295	Own	8I	3x4¼	240 0	28 80	94@3400	4 46	121
Nash 990	1565	Own	8I	3¼x4½	298 0	33 80	115@3600	4 50	124-33
Oldsmobile 6	955	Own	6L	3⅛x4⅛	213 3	26 35	71@3200	4 56	116½
Oldsmobile 8	1055	Own	8L	3x4¼	240 3	28 80	82@3200	4 56	116½
Packard 901	2485	Own	8L	3 5/16x5	320 0	32 50	110@3200	4 69	120½
Packard 902	2775	Own	8L	3 5/16x5	320 0	32 50	110@3200	4 69	136½
Packard 903	3845	Own	8L	3½x5	384 8	39 20	135@3200	4 69	142½
Packard 904	4150	Own	8L	3½x5	384 8	39 20	135@3200	4 69	147½
Peerless Master 8	1995	Own	6L	3⅜x4½	322 1	36 45	120@3200	4 45	125
Peerless Custom 8	2795	Own	8L	3⅜x4½	322 1	36 45	120@3200	4 45	138
Pierce-Arrow 54	2485	Own	8L	3½x4¾	366 0	39 20	125@3000	4 42	137-42
Pierce-Arrow 53	3285	Own	12L	3⅜x4	398 0	50 80	140@3100	4 42	137-42
Pierce-Arrow 52, 51	3785	Own	12L	3½x4	429 0	54 60	150@3100	4 42	142-47
Plymouth	575	Own	4L	3⅝x4¾	196 1	21 03	56@2800	4 33	109⅜
Pontiac 6	765	Own	6L	3 1/16x3⅞	200 0	26 34	65@3200	4 55	114
Pontiac 8	945	Own	8H	3 1/16x3⅜	251 0	37 80	85@3400	4 22	117
Reo 6-21	995	Own	6L	3⅜x5	268 3	27 34	85@3200	4 07	121
Reo 8-21	1195	Own	8L	3x4¾	268 6	28 80	90@3300	4 42	121
Reo 8-25	1565	Own	8L	3x4¾	268 6	28 80	90@3300	4 42	125
Reo 31	1985	Own	8L	3⅜x5	356 0	36 48	125@3300	4 07	131
Reo 35	2445	Own	8L	3½x5	356 0	36 48	125@3300	4 07	135
Rockne Six 65	585	Own	6L	3⅛x4⅛	189 8	23 40	65@3200	4 30	100
Rockne Six 75	685	Own	6L	3¼x4⅛	205 0	25 40	72@3200	4 73	114
Studebaker 6	895	Own	6L	3¼x4⅝	230 0	25 40	80@3200	4 27	117
Studebaker Dict 8	1150	Own	8L	3 1/16x3¾	221 0	30 00	85@3200	4 73	117
Studebaker Com 8	1585	Own	8L	3 1/16x4¼	250 4	30 00	101@3200	4 73	125
Studebaker Pres 8	1850	Own	8L	3⅛x4⅜	337 0	39 20	122@3200	4 31	135
Stutz LAA	1620	Own	6O	3⅜x4½	241 5	27 34	85@3150	4 75	127½
Stutz SV16	2995	Own	8O	3⅜x4½	322 0	36 40	113@3300	4 75	134-45
Stutz DV32	3995	Own	6O	3⅜x4½	322 0	36 40	156@3900	4 50	134-45
Willys Overland 6-90	695	Own	6L	3¼x3⅞	193 0	25 35	65@3400	4 60	113
Willys Overland 8 88	895	Own	8L	3½x4	245 4	31 25	80@3200	4 40	121
Willys-Knight 95	895	Own	6S	2 1/16x4⅜	177 9	20 70	60@3400	4 89	113
Willys-Knight 66D	1395	Own	6S	3⅜x4¾	255 0	27 34	87@3200	4 18	121

b-3 04, 4 55
Cont — Continental
H — Horizontal valves
I — "I" Head with rocker arms and long push rods
L — L-Head
Lyc — Lycoming
O — Overhead camshaft
S — Sleeve valves

Major Specifications

1931

MAKE AND MODEL	Price cheapest 5-passenger 4-door sedan	Engine make and model	No of cylinders and valve arrangement	Bore and stroke	Taxable H. P.	Maximum brake H P.	Gearratio5-passenger 4-door sedan	Wheelbase
Auburn 8-98	995	LycGU	8L	3x4¾	28 80	98@3400	4 45	126
Austin	395	Own	4L	2 2x3	7 78	14@3200	5 25	75
Buick 8 50	1095	Own	8I	2⅞x4¼	26 45	77@3200	4 55	114
Buick 8-60	1355	Own	8I	3⅛x4⅝	30 02	90@3000	4 45	118
Buick 8-80	1565	Own	8I	3⅜x5	35 12	104@2800	4 27	124
Buick 8-90	1785	Own	8I	3⅜x5	35 12	104@2800	4 36	132
Cadillac V8	2795	Own	8L	3⅜x4 11/16	36 45	95@3000	4 75	134
Cadillac V12	3895	Own	12I	3½x4	46 90	135@3400	4 54	140–43
Cadillac V16	5950	Own	16I	3x4	57 50	165@3400	4 39	148
Chevrolet	635	Own	6I	3 1/16x3¾	26 30	50@2600	4 10	109
Chrysler 6	895	Own	6L	3¼x4⅜	25 35	70@3200	4 60	116
Chrysler 66	1095	Own	6L	3¼x4¾	23 44	68@3200	4 70	
Chrysler 70	1295	Own	6L	3⅜x5	27 34	93@3200	3 82	
Chrysler 8	1525	Own	8L	3½x4¼	31 25	88@3400	4 10	145
Chrysler Imperial 8	2745	Own	8L	3½x5	39 20	125@3200	3 82	145
Cord	2395	LycFDA	8L	3¼x4½	33 80	125@3600	4 80	137½
Cunningham		Own	8L	3¾x5	45 00	110@2500	4 25	132–42
DeSoto 6	775	Own	6L	3¼x4⅛	25 35	72@3400	4 33	109⅜
DeSoto 8	995	Own	8L	2⅞x4¼	26 45	75@3400	4 60	114
Dodge Bros 6	845	Own	6L	3¼x4¼	25 35	68@3200	4 66	114
Dodge Bros 8	1135	Own	8L	3x4¼	28 80	84@3400	4 6	118
Duesenberg		Own	8O	3⅜x4¾	45 00	265@4200		143–54
Durant 6-10	765	ConW8	4L	3⅞x4¼	24 03	50@2800	3 90	112
Durant 6-12	795	Con22A	6L	3¼x4	25 40	58@3100	4 40	112
Durant 6-14	995	Con22A	6L	3¼x4	25 40	58@3100	4 40	112
Essex Super 6	695	Own	6L	2⅞x4½	19 84	60@3300	5 40	113
Ford A	600	Own	4L	3⅞x4¼	24 03	40@2200	3 77	103½
Franklin 15	2295	Own	6I	3½x4¾	29 40	100@3100	4 54	125–32
Gardner 136	1270	LycWR	6L	2⅞x4¾	19 84	70@3500	4 45	122
Gardner 148	1790	LycGR	8L	2⅞x4¾	26 45	100@3300	4 45	125
Gardner 158	2170	LycMDG	8L	3¼x4½	33 80	126@3300	4 45	130
Graham Std 6	895	Own	6L	3¼x4½	25 35	76@3400	4 30	115
Graham Spec 6	975	Own	6L	3¼x4½	25 35	76@3400	4 09	115
Graham Spec 8	1195	Own	8L	3⅛x4	31 25	85@3400	4 09	120
Graham Cust 8	1845	Own	8L	3¼x4½	33 80	100@3400	4 09	134
Hudson 8	995	Own	8L	2⅞x4½	26 45	87@3600	4 63	119–26
Hupmobile Cent 6	995	Own	6L	3¼x4¼	25 35	70@3200	4 70	113½
Hupmobile Cent 8	1295	Own	8L	2⅞x4⅝	26 45	90@3200	4 55	118
Hupmobile C	1595	Own	8L	3x4¾	28 80	100@3200	4 55	121
Hupmobile H	1895	Own	8L	3½x4¾	39 20	133@3400	4 08	125
Hupmobile U	2295	Own	8L	3½x4¾	39 20	133@3400	4 08	137
Jordan 80	1795	Con17S	8L	2⅞x4¾	26 45	80@3000	4 90	120
Jordan 90	2295	Con15S	8L	3x4¾	28 90	85@3200	4 45	125
LaSalle	2205	Own	8L	3⅜x4 11/16	36 45	95@3000	4 75	134
Lincoln	4600	Own	8L	3½x5	39 20	120@2900	4 58	145
Marmon 70	995	Own	8L	2 13/16x4¼	25 40	84@3400	4 70	112¾
Marmon 88	2295	Own	8L	3¼x4¾	33 80	125@3400	4 45	130–6
Marmon 16	4775	Own	16I	3⅛x4	62 50	200@3400	3 69	145
Nash 6-60	845	Own	6L	3¼x4⅜	23 40	65@3200	4 70	114¼
Nash 8-70	995	Own	8L	2⅞x4⅜	26 40	78@3300	5 10	116¼
Nash 8 80	1295	Own	8I	3x4¼	28 80	87@3400	4 72	121
Nash 8-90	1565	Own	8I	3¼x4½	33 80	115@3600	4 50	124–33
Oakland 8	895	Own	8H	3 1/16x3⅜	37 80	85@3400	4 55	117
Oldsmobile	925	Own	6L	3 3/16x4⅛	24 40	65@3350	4 56	113½
Packard 826	2385	Own	8L	3 1/16x5	32 50	100@3200	4 69	127½
Packard 833	2675	Own	8L	3 1/16x5	32 50	100@3200	4 69	134½
Packard 840	3795	Own	8L	3½x5	39 20	120@3200	4 69	140½
Packard 845	4150	Own	8L	3½x5	39 20	120@3200	4 69	145½
Peerless Std 8	1495	Own	8L	2⅞x4¾	26 45	85@3200	4 45	118
Peerless Mast 8	1995	Own	8L	3⅜x4½	36 45	120@3200	4 45	125
Peerless Cust 8	2795	Own	8L	3⅜x4½	36 45	120@3200	4 45	138
Pierce-Arrow 43	2685	Own	8L	3½x4¾	39 20	125@3000	4 08	134–7
Pierce-Arrow 42, 41	3695	Own	8L	3½x5	39 20	132@3000	4 23	142–7
Plymouth	625	Own	4L	3⅝x4¾	21 03	48@2800	4 33	109
Pontiac	745	Own	6L	3 3/16x3⅞	26 34	60@3000	4 55	112
Reo 15	1005	Con16E	6L	3⅜x4	27 34	60@2800	4 45	116
Reo 20	1295	Own	6L	3⅜x5	27 34	85@3200	4 07	120
Reo 25	1695	Own	6L	3⅜x5	27 34	85@3200	4 42	125
Reo 30	1995	Own	8L	3⅜x5	36 48	125@3300	3 77	130
Reo 35	2485	Own	8L	3⅜x5	36 48	125@3300	3 77	135
Studebaker 6	895	Own	6L	3¼x4⅛	25 40	70@3200	4 73	114
Studebaker Dict 8	1150	Own	8L	3 1/16x3¾	30 00	81@3200	4 73	114
Studebaker Com 8	1585	Own	8L	3 1/16x4¼	30 00	101@3200	4 73	124
Studebaker Pres 8	1850	Own	8L	3½x4⅜	39 20	122@3200	4 31	130–6
Stutz LA	2245	Own	6O	3⅜x4½	27 34	85@3150	4 75	127½
Stutz MA, MB	3695	Own	8O	3⅜x4½	36 40	113@3300	4 50	135–45
Willys Six 97	675	Own	6L	3¼x3⅞	25 35	65@3400	4 60	110
Willys Six 98D	795	Own	6L	3¼x3⅞	25 35	65@3400	4 60	113
Willys 8 80	995	Own	8L	3½x4	31 25	80@3200	4 40	121
Willys Knight 66D	1095	Own	6S	3⅜x4¾	27 34	87@3200	4 18	121

1930

MAKE AND MODEL	Price cheapest 5-passenger 4-door sedan	Engine make and model	No of cylinders and valve arrangement	Bore and stroke	Taxable H P	Maximum brake H P.	Gearratio5-passenger 4 door sedan	Wheelbase
Auburn 6-85	995	LycWR	6L	2⅞x4¾	19 84	70@3400	4 90	120
Auburn 8 95	1195	LycGR	8L	2⅞x4¾	26 45	100@3700	4 70	125
Auburn 125	1495	LycMDA	8L	3¼x4½	33 80	125@3600		129
Blackhawk L6	2395	Own	6O	3⅜x4½	27 34	85@3200	4 75	127½
Blackhawk L8	2395	Own	8L	3x4¾	28 80	90@3200	4 75	127½
Buick 40	1330	Own	6I	3⅛x4⅝	28 36	80½ @2800	4 55	118
Buick 50	1540	Own	6I	3¾x5	33 75	98@2800	4 27	124
Buick 60	1760	Own	6I	3¾x5	33 75	98@2800	4 27	130
Cadillac V8	3695	Own	8L	3⅜x4 11/16	36 45	95@3000	5 08	140
Cadillac V16	5C50	Own	16I	3x4	57 50	185@3400	4 39	148
Chevrolet	675	Own	6I	3 1/16x3¾	26 30	50@2600	4 00	107
Chrysler 66	1095	Own	6L	3⅛x4¾	23 43	68@3200	4 10	
Chrysler 70	1445	Own	6L	3⅜x5	27 34	93@3200	3 58	
Chrysler 77	1725	Own	6L	3⅜x5	27 34	93@3200	3 82	
Chrysler Imperial	3075	Own	6L	3⅜x5	31 54	100@3200	3 77	
Cord	3095	LycFDA	8L	3¼x4½	33 80	125@36C0	4 80	137½
Cunningham		Own	8L	3¾x5	45 00	110@2500	4 25	132–4
DeSoto 6	885	Own	6L	3x4⅛	21 60	55@3000	4 70	2
DeSoto 8	995	Own	8L	2⅞x4	26 45	72@3400	4 90	
Dodge Bros DD6	865	Own	6L	3¼x4⅛	23 40	61@3400	4 90	
Dodge Bros 6	995	Own	6L	3⅜x3⅞	27 34	63@3000	4 73	112
Dodge Bros Senior 6	1595	Own	6L	3⅜x4½	27 34	78@3000	4 45	120
Dodge Bros DC8	1145	Own	8L	2⅞x4¼	26 45	78@3000	4 60	
Duesenberg		Own	8O	3⅜x4¾	45 00	265@4200		142½
Durant 614	845	Cont22A	6L	3¼x4	25 40	58@3100	4 40	
Durant 617	1065	Cont15U	6L	3⅜x4⅝	27 34	70@3000	3 73	
Elcar 75	1095	LycWS	6L	2⅞x4¾	19 84	61@3000	4 88	117
Elcar 95	1395	LycGS	8L	2⅞x4¾	26 45	90@3000	4 90	123
Elcar 96	1595	LycGS	8L	2⅞x4¾	26 45	90@3000	3 80	123
Elcar 130	1995	LycMD	8L	3⅜x4½	35 45	140@3300	3 80	130
Erskine	965	Own	6L	3¼x4½	25 40	70@3200	4 78	114
Essex Super 6	825	Own	6L	2¾x4½	18 15	60@3600	5 40	113
Ford	600	Own	4L	3⅞x4¼	24 03	40@2200	3 77	103½
Franklin 145	2585	Own	6I	3½x4¾	29 40	95@3100	4 54	125
Franklin 147	2715	Own	6I	3½x4¾	29 40	95@3100	4 54	132
Gardner 136	1295	LycWR	6L	2⅞x4¾	19 84	70@3500	4 45	122
Gardner 140	1695	LycGR	8L	2⅞x4¾	26 45	90@3300	4 45	125
Gardner 150	2045	LycMDG	8L	3¼x4½	33 80	126@3300	4 45	130
Graham Std 6	895	Own	6L	3¼x4½	23 44	66@3200	4 70	115
Graham Spc 6	1225	Own	6L	3¼x4½	25 35	76@3400	3 91	115
Graham Std 8	1445	Own	8L	3¼x4½	33 80	100@3400	4 45	122
Graham Spc 8	1595	Own	8L	3¼x4½	33 80	100@3400	3 90	122
Graham Cust 8 127	2025	Own	8L	3⅜x4½	36 45	120@3200	3 64	127
Graham Cust 8 137	2455	Own	8L	3⅜x4½	36 45	120@3200	3 92	137
Hudson Great 8	1150	Own	8L	2¾x4½	24 20	80@3400	4 63	119
Hupmobile S	1060	Own	6L	3¼x4¼	25 35	70@3200	4 70	
Hupmobile C	1595	Own	8L	3x4¾	28 80	100@3200	4 55	
Hupmobile H	1985	Own	8L	3½x4¾	39 20	133@3400	4 07	
Jordan 80	1495	Cont17S	8L	2⅞x4¾	26 45	80@3000	4 90	120
Jordan 90	2295	Cont15S	8L	3x4¾	28 90	85@3200	4 45	125
Kissel 73	1695	Own	6L	2⅞x4¾	19 80	70@3500	5 30	117
Kissel 95	2095	Own	8L	2⅞x4¾	26 50	95@3400	3 92	125
Kissel 126	3185	Own	8L	3¼x4½	33 80	126@3600	4 09	132–3
LaSalle	2565	Own	8L	3⅜x4 11/16	35 10	90@3000	4 54	134 9
Lincoln	4500	Own	8L	3½x5	39 20	90@2800	4 58	136
Marmon Roosevelt	995	Own	8L	2¾x4¼	24 20	77@3400	4 90	
Marmon 8-69	1520	Own	8L	2 13/16x4¼	25 40	84@3400	4 90	118
Marmon 8-79	2020	Own	8L	3⅜x4¾	32 50	110@3400	4 70	125
Marmon Big 8	2695	Own	8L	3¼x4¾	33 80	125@3400	4 45	136
Marquette	1060	Own	6L	3⅛x4⅝	23 44	67@3000	4 54	114
Nash Single 6	1005	Own	6L	3⅛x4⅞	23 44	60@2800	4 70	114
Nash Twin Ignition 6	1415	Own	6I	3⅛x4½	27 34	744 @2800	4 50	118
Nash Twin Ignition 8	1795	Own	8L	3¼x4½	33 80	100@3200	4 50	124
Oakland 101	1145	Own	8H	3 1/16x3⅜	37 80	85@3000	4 42	117
Oldsmobile	995	Own	6L	3⅜x4⅛	24 40	62@3000	4 54	113½
Packard 726	2485	Own	8L	3⅜x5	32 50	90@3200	4 38	127½
Packard 733	2675	Own	8L	3⅜x5	32 50	90@3200	4 69	134½
Packard 740	3585	Own	8L	3½x5	39 20	106@3200	4 38	140½
Packard 745	4985	Own	8L	3½x5	39 20	106@3200	4 38	145½
Peerless Std 8	1545	Own	8L	2⅞x4¾	26 45	85@3200	4 45	118
Peerless Mast 8	2045	Own	8L	3⅜x4½	36 45	120@3200	4 45	125
Peerless Cust 8	2845	Own	8L	3⅜x4½	36 45	120@3200	4 45	138
Pierce-Arrow 132	2750	Own	8L	3⅜x4¾	36 45	115@3200	4 42	132
Pierce-Arrow 134		Own	8L	3½x4¾	39 20	125@3000	4 08	134
Pierce-Arrow 139	3275	Own	8L	3½x4¾	39 20	125@3000	4 42	139
Pierce-Arrow 144	4275	Own	8L	3½x5	39 20	132@3000	4 42	144
Plymouth	695	Own	4L	3⅝x4¾	21 03	46@2400	4 30	
Pontiac	825	Own	6L	3 3/16x3⅞	26 34	60@3000	4 42	110
Reo 15	1195	Cont16E	6L	3⅜x4	27 34	60@2800	4 45	116
Reo 20	1595	Own	6L	3⅜x5	27 34	80@3200	4 07	120
Reo 25	1795	Own	6L	3⅜x5	27 34	80@3200	4 42	124
Stearns Knight H8-90	5500	Own	8S	3½x5	39 20	128@3000	4 50	137
Stearns Knight J8-90	5600	Own	8S	3½x5	39 20	128@3000	4 50	145
Studebaker Dict 6	1165	Own	6L	3⅝x4⅛	27 34	68@3200	4 78	115
Studebaker Dict 8	1285	Own	8L	3 1/16x3¾	30 00	70@3200	5 11	115
Studebaker Com 6	1425	Own	6L	3⅝x4⅝	27 34	75@3000	3 91	120
Studebaker Com 8	1515	Own	8L	3 1/16x4¼	30 00	80@3600	4 70	120
Studebaker Pres FH	1765	Own	8L	3½x4⅜	39 20	115@3200	4 31	125
Studebaker Pres FE	1995	Own	8L	3½x4⅜	39 20	115@3200	4 31	135
Stutz MA, MB	2995	Own	8O	3⅜x4½	36 45	113@3300	4 50	134½
Viking	1695	Own	8H	3⅜x3⅝	36 50	81@3200	4 63	125
Whippet 96A	585	Own	4L	3½x4¾	15 62	40@3200	4 55	103¼
Willys 6	795	Own	6L	3¼x3⅞	25 35	65@3400	4 09	110
Willys Knight 70B	1075	Own	6S	2 13/16x4⅜	20 70	53@3000	4 89	112½
Willys Knight 66B	1795	Own	6S	3⅜x4¾	27 34	87@3200	4 60	120

Con, Cont — Continental

Lyc — Lycoming

Major Specifications

1929

MAKE AND MODEL	Price cheapest 5 passenger 4-door sedan	Engine make and model	No. of cylinders and valve arrangement	Bore and stroke	Taxable H P.	Maximum brake H P	Gearratio5 passenger 4 door sedan	Wheel base
Auburn 6-80	995	LycWS	6L	2 7/8x4 3/4	19 84	65@3400	4 90	120
Auburn 8-90	1395	LycGS	8L	2 7/8x4 3/4	26 45	93@3300	4 70	125
Auburn 120	1795	LycMD	8L	3 1/4x4 1/2	33 80	120@3300	4 45	130
Blackhawk L6	2695	Own	6O	3 3/8x4 1/2	27 34	85@3200	4 75	127 1/2
Blackhawk L8	2645	Own	8L	3x4 3/4	28 80	90@3200	4 75	127 1/2
Buick 116	1320	Own	6I	3 1/8x4 5/8	26 34	74@2800	4 90	115 3/4
Buick 121	1450	Own	6I	3 5/8x5	31 54	90 1/2@2800	4 64	120 3/4
Buick 129	1935	Own	6I	3 5/8x5	31 54	90 1/2@2800	4 64	128 3/4
Cadillac	3495	Own	8L	3 1/2x4 11/16	35 10	90@3000	4 75	140
Chandler 65	895	Own	6L	3 1/8x4 1/4	23 44	55@3000	4 90	109
Chandler Big 6	1525	Own	6L	3 3/4x5	33 75	83@2600	4 10	124
Chandler 75	1395	Own	8L	3x4 1/2	28 80	80@3200	4 90	118
Chandler 85	1795	Own	8L	3 3/8x4 3/4	36 45	95@3000	4 45	124
Chevrolet	675	Own	6I	3 1/8x3 3/4	26 34	46@2600	3 80	107
Chrysler 65	1145	Own	6L	3 1/8x4 1/4	23 44	65@3200	4 90	
Chrysler 75	1535	Own	6L	3 1/4x5	25 35	75@3200	4 30	
Chrysler Imperial	2975	Own	6L	3 5/8x5	31 54	100@3200	4 45	
Cunningham		Own	8L	3 3/4x5	45 00	106@2400	4 23	132
DeSoto	885	Own	6L	3x4 1/8	21 60	55@3000	4 70	
Dodge Bros 6	995	Own	6L	3 3/8x3 7/8	27 34	58@3000	4 45	112
Dodge Bros Senior	1570	Own	6L	3 3/8x4 1/2	27 34	78@3000	4 45	120
Duesenberg		Own	8O	3 3/4x4 3/4	45 00	265@4500	a	142 1/2
Durant Four 4	695	ContW5	4L	3 3/8x4 1/4	18 20	36@2400	4 44	107
Durant Six 60	750	Cont14L	6L	2 7/8x4 3/4	19 84	43@2800	4 44	109
Durant Six 66	975	Cont14L	6L	2 7/8x4 3/4	19 84	43@2800	3 72	112
Durant Six 70	1285	Cont	6L	3 3/8x4	27 34	65@2800	3 72	119
Elcar 75	1095	LycWS	6L	2 7/8x4 3/4	19 84	61@3000	4 88	117
Elcar 95 96	1395	LycGS	8L	2 7/8x4 3/4	26 45	80@3000	4 90	123
Elcar 120	2295	LycMD	8L	3 1/4x4 1/2	33 80	115@3300	4 82	134
Erskine	945	Own	6L	2 3/4x4 1/2	18 15	43@3000	4 78	109
Essex Super 6	795	Own	6L	2 3/4x4 1/2	18 15	55@3600	5 60	110 1/2
Ford A	625	Own	4L	3 7/8x4 1/4	24 03	40@2200	3 70	103 1/2
Franklin 130	2180	Own	6I	3 1/4x4 3/4	25 35	50@2500	4 54	120
Franklin 135, 137	2625	Own	6I	3 1/4x4 3/4	29 40	60@2500	4 54	125-32
Gardner 120	1295	LycGT	8L	2 3/4x4 3/4	24 20	65@3200	4 90	122
Gardner 125	1895	LycGS	8L	2 7/8x4 3/4	26 45	85@3400	4 90	125
Gardner 130	2395	LycMDG	8L	3 1/4x4 1/2	33 80	115@3300	4 45	130
Graham Paige 612	935	Own	6L	3x4 1/2	21 60	62@3200	4 70	112
Graham Paige 615	1195	Own	6L	3 1/4x4 1/2	25 35	76@3200	3 64	115
Graham Paige 621	1595	Own	6I	3 1/2x5	25 35	97@3200	3 65	121
Graham Paige 827	1925	Own	8L	3 3/8x4 1/2	36 45	120@3200	3 64	127
Graham Paige 837	2355	Own	8L	3 3/8x4 1/2	36 45	120@3200	3 90	137
Hudson Super 6	1175	Own	6F	3 1/2x5	29 40	91@3200	4 08	128 7/16
Hupmobile A	1395	Own	6L	3 1/4x4 1/4	25 35	57@	4 73	114
Hupmobile M	1875	Own	8L	3x4 3/4	28 80	80@	4 36	120
Jordan 6E	1795	Cont	6L	3 5/8x4 5/8	27 34	70@3000	4 45	116
Jordan G	2195	Cont15S	8L	3x4 3/4	28 80	85@3200	4 45	125
Kissel 73	1595	Own	6L	2 7/8x4 3/4	19 84	52@2900	5 30	117
Kissel 95	1995	Own	8L	2 7/8x4 3/4	26 45	90@3200	5 10	125
Kissel 126	3275	Own	8L	3 1/4x4 1/2	33 80	126@3400	4 80	132
LaSalle	2450	Own	8L	3 1/4x4 1/2	33 80	85@3000	4 54	125
Lincoln	4900	Own	8L	3 1/2x5	39 20	85@2800	4 58	136
Locomobile 86, 88	2350	LycHDL	8L	3 1/2x4 1/2	33 80	102@3000	4 81	130
Marmon 68	1465	Own	8L	2 1/8x4 1/4	25 30	76@3200	4 90	114
Marmon 78	1965	Own	8I	2 1/8x4	27 60	86@3400	4 90	120
Moon 6-72	1495	Cont11E	6L	3 3/8x4	27 34	61@2900	4 90	120
Nash Standard 6	955	Own	6L	3 1/8x4	23 44	50@2800	4 77	112 1/4
Nash Special 6	1345	Own	6I	3 1/4x4 1/2	25 35	65@2900	4 88	116
Nash Advanced 6	1550	Own	6I	3 1/8x5	28 36	78@2900	4 50	121
Oakland A A 6	1245	Own	6L	3 3/8x4 1/4	27 34	68@3000	4 72	117
Oldsmobile	975	Own	6L	3 1/8x4 1/8	24 38	55@2700	4 41	113 1/2
Packard 626	2435	Own	8L	3 1/8x5	32 92	90@3200	4 33	126
Packard 633	2735	Own	8L	3 1/8x5	32 92	90@3200	4 69	130
Packard 640	3750	Own	8L	3 1/2x5	39 20	106@3200	4 37	140
Packard 645	5785	Own	8L	3 1/2x5	39 20	106@3200	4 37	145
Peerless 6-61	1195	Cont	6L	3 3/8x4	27 34	62@3000	4 88	116
Peerless 6-81	1595	Cont18C	6L	3 3/8x4 5/8	27 34	66@3000	4 22	916
Peerless 125	2195	Cont12K	8L	3 3/8x4 1/2	36 45	114@3300	4 44	116
Pierce Arrow 125	2975	Own	6L	3 1/2x4 3/4	39 20	125@3200	4 23	133
Pierce Arrow 126	3975	Own	6L	3 1/2x4 3/4	39 20	125@3200	4 23	143
Plymouth	695	Own	4L	3 5/8x4 1/8	21 03	45@2800	4 30	
Pontiac 6-29	845	Own	6L	3 1/8x3 7/8	26 34	57@3000	4 18	110
Reo Fly Cld Mate	1395	Cont16E	6L	3 3/8x4	27 34	65@2800	4 45	115
Reo Fly Cld Mstr	1745	Oen	6L	3 3/8x5	27 34	80@3200	4 42	112
Stearns Kt M6-80	2495	Own	6S	3 3/8x4 3/4	27 34	70@3200	4 70	126
Stearns Kt N6-80	2495	Own	6S	3 3/8x4 3/4	27 34	70@3200	4 70	134
Stearns Kt H8-90	5500	Own	8S	3 1/2x5	39 20	120@2800	4 50	137
Stearns Kt J8-90	5600	Own	8S	3 1/2x5	39 20	120@2800	4 50	145
Studebaker Dict	1265	Own	6L	3 3/8x4 1/2	27 34	67@2800	4 30	113
Studebaker Com 6	1375	Own	6L	3 3/8x4 5/8	27 34	44@3000	3 91	119 1/2
Studebaker Com 8	1525	Own	8L	3 1/8x4 1/4	30 00	80@3600	4 36	119 1/2
Studebaker Pres FH	1785	Own	8L	3 1/2x4 3/8	39 20	114@3200	4 08	125
Studebaker Pres FE	2350	Own	8L	3 1/2x4 3/8	39 20	114@3200	4 31	135
Stutz M	3695	Own	8O	3 3/8x4 1/2	36 45	115@3600	4 50	134 1/2
Whippet 96A	595	Own	4L	3 1/8x4 3/4	15 62	40@3200	4 56	103 1/2
Whippet 98A	760	Own	6L	3 1/8x3 7/8	23 44	50@3000	4 56	112 1/2
Willys Knight 70B	1045	Own	6S	2 7/8x4 5/8	20 70	53@3000	4 89	112 1/2
Willys Knight 66B	1895	Own	6S	3 3/8x4 3/4	27 34	72@3200	4 70	120
Windsor 8-82	1845	Cont15S	8L	3x4 3/4	28 80	88@3100	4 88	125 1/2
Windsor 8-92	1995	Cont15S	8L	3x4 3/4	28 80	88@3100	3 93	125 1/2

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MAKE AND MODEL	Price cheapest 5-passenger 4-door sedan	Engine make and model	No. of cylinders and valve arrangement	Bore and stroke	Taxable H P.	Maximum brake H P.	Gearratio5-passenger 4-door sedan	Wheel-base
Auburn 76	1295	LycWS	6L	2 7/8x4 3/4	19 84	60@3400	4 90	120
Auburn 88	1595	LycGS	8L	2 7/8x3 3/4	26 40	88@3200	4 70	125
Auburn 115	2095	Lyc4MD	8L	3 1/4x4 1/2	33 80	115@3300	4 45	130
Buick 115 ..	1195	Own	6I	3 1/8x4 1/2	23 44	63@2800	4 90	115
Buick 120-128 .	1495	Own	6I	3 1/2x4 3/4	29 40	77@2800	4 72	120-8
Cadillac	3395	Own	8L	3 1/2x4 11/16	35 10	90@3000	4 75	140
Chandler Spec 6	995	Own	6L	3x4 1/2	21 60	45@2600	4 90	109
Chandler Big 6	1525	Own	6L	3 1/2x5	29 40	63@2300	4 45	124
Chandler Royal 8	1995	Own	8L	3 1/4x4 3/4	33 80	80@3000	4 45	124
Chevrolet	585	Own	4I	3 1/8x4	21 70	35@2200	3 81	107
Chrysler 52	670	Own	4L	3 5/8x4 1/8	21 03	38@2800	4 70	
Chrysler 62	1095	Own	6L	3x4 1/2	21 60	54@3000	4 60	
Chrysler 72	1595	Own	6L	3 1/4x5	25 35	75@3200	4 30	
Chrysler 80	2945	Own	6L	3 5/8x5	31 50	112@3000	4 08	
Cunningham V7		Own	8L	3 3/4x5	45 00	95@2400	4 23	142
Davis 99	1885	Con14S	8L	3x4 3/4	28 80	85@3200	4 45	119
Dodge Bros 128	875	Own	4L	3 7/8x4 1/2	24 03	40@2400	4 08	108
Dodge Bros Victory	1095	Own	6L	3 3/8x3 7/8	27 34	58@3000	4 45	112
Dodge Bros Senior	1495	Own	6L	3 1/4x4 1/2	25 35	60@2800	4 54	116
Durant 55	795	Con14L	6L	2 3/4x4 3/4	18 15	40@2400	4 44	107
Durant 65	975	Con15L	6L	2 7/8x4 3/4	19 84	47@2800	4 44	110
Durant 75	1385	Con15U	6L	3 3/8x4 5/8	27 34	70@3000	3 72	119
Elcar 6-70	1295	LycWS	6L	2 7/8x4 3/4	19 84	52@2900	4 90	117
Elcar 8-78	1395	LycGT	8L	2 3/4x4 3/4	24 20	62@3000	4 90	123
Elcar 8 82	1695	LycGS	8L	2 7/8x4 3/4	33 80	70@2900	4 90	123
Elcar 8-91 92	2295	Lyc	8L	3 1/4x4 1/2	33 80	84@2900	4 82	132
Erskine American 6	885	Con9F	6L	2 3/4x4 1/2	18 15	42@3100	4 78	107
Essex Super 6	735	Own	6L	2 5/8x4 1/2	17 32		5 40	110 1/2
Falcon 12	1095	Own	6S	2 1/8x3 7/8	20 70	45@3000	5 11	109 1/2
Ford A	495	Own	4L	3 7/8x4 1/4	24 03	40@2200	3 70	103 1/2
Franklin Airman	2790	Own	6I	3 1/4x4 3/4	25 23	46@2500	4 73	119
Gardner 8-75	1395	LycGT	8L	2 3/4x4 3/4	24 20	65@3200	4 88	122
Gardner 8 85	1885	LycGS	8L	2 7/8x4 3/4	26 45	74@3200	4 88	125
Gardner 8 95	2295	LycMD	8L	3 1/4x4 1/2	33 80	115@2200	4 45	130
Graham Paige 610	875	Own	6L	2 7/8x4 1/2	19 84	52@3100	4 45	110 1/2
Graham Paige 614	1295	Own	6L	3 1/8x4 1/2	23 44	71@3200	3 90	114
Graham Paige 619	1595	Own	6L	3 1/2x5	29 40	97@3200	3 65	119
Graham Paige 629	1985	Own	6L	3 1/2x5	29 40	97@3200	3 65	129
Graham Paige 835	2285	Own	8L	3 3/8x4 1/2	36 45		3 65	135
Hudson Super 6	1250	Own	6F	3 1/2x5	29 40	.	4 45	118-27
Hupmobile A	1345	Own	6L	3 1/4x4 1/4	25 35	57@	4 73	114
Hupmobile M	1825	Own	8L	3x4 3/4	28 80	80@	4 36	120
Jordan R	1395	Con	6L	3 1/4x4	25 40	62@3000	4 60	107
Jordan Air Line 8JE	1995	Con	8L	3x4 3/4	28 90	80@3200	4 09	116
Kissel 6-70	1495	Own	6L	2 7/8x4 3/4	19 80	52@2900	4 80	117
Kissel Smaller 8	1895	Own	8L	2 7/8x4 3/4	26 50	70@2900	4 63	125
Kissel 8 80	1995	Own	8L	2 7/8x4 3/4	26 50	70@2900	4 63	125-32
Kissel 8-90	2295	Own	8L	3 1/8x4 1/2	35 00	85@3100	4 89	131-9
LaSalle	2495	Own	8L	3 1/2x4 1/2	31 20	80@3300	4 54	125-34
Lincoln	4800	Own	8L	3 1/2x5	39 20	90@2800	4 58	136
Locomobile 8-70	1975	Con	8L	2 7/8x4 3/4	26 45	70@3000	4 79	122
Locomobile 8 80	2850	Lyc	8L	3 1/4x4 1/2	33 80	90@3000	4 81	130 40
McFarlan Line 8	3180	Lyc	8L	3 1/4x4 1/2	33 80	79@3000	5 10	131
McFarlan TV6	6720	Own	6T	4 1/2x6	48 60	120@2400	3 53	141
Marmon 68	1395	Own	8L	2 3/4x4 1/4	24 20	72@3200	4 90	114
Marmon 78	1895	Own	8I	2 1/8x4	27 60	86@3400	4 90	120
Marmon 75	3195	Own	6I	3 3/4x5 1/8	33 80	75@2800	4 50	136
Moon 6-72	1395	Con	6L	3 3/8x4	27 30	66@3150	4 90	120
Moon 8	2195	Con	8L	3x4 3/4	28 80	85@3100	4 63	125 1/2
Nash Standard 6	895	Own	6L	3 1/8x4	23 44	45@2600	4 77	108 1/4
Nash Special 6	1215	Own	6I	3 1/4x4 1/2	25 35	52@2600	4 88	112 3/4
Nash Advanced 6	1425	Own	6I	3 1/8x5	28 36	70@2400	4 50	121-7
Oakland 212	1045	Own	6I	3 1/4x4 1/4	25 35	60@2800	4 41	117
Oldsmobile	925	Own	6L	3 1/8x4 1/8	24 40	55@2700	4 41	113 1/2
Packard 526	2285	Own	6L	3 1/2x5	29 40	82@3200	4 33	126
Packard 533	2685	Own	6L	3 1/2x5	29 40	82@3200	4 69	133
Packard 443	4450	Own	8L	3 1/2x5	39 20	106@3200	4 38	143
Peerless 6-60	1295	Con	6L	3 1/4x4	25 35	62@3000	4 44	116
Peerless 6-80	1395	Con8U	6L	3 1/4x4 5/8	25 35	63@2600	4 46	116
Peerless 6-91	1895	Own	6L	3 1/2x5	29 40	70@2500	4 25	120
Peerless 8-69	2345	Own	8L	3 1/4x5	33 80	80@2800	4 42	126-33
Pierce Arrow 81	3250	Own	6L	3 1/2x5	29 40	75@3200	4 45	130
Pierce Arrow 36	5875	Own	6T	4x5 1/2	38 40	100@2600	4 29	138
Pontiac 6-28	745	Own	6L	3 1/4x3 3/4	25 35	37@2400	4 18	110
Reo Wolverine	1195	Con13E	6L	3 1/4x4	25 20	50@2400	4 45	115
Reo Flying Cloud	1595	Own	6L	3 1/4x5	25 20	65@2800	4 58	121
Star	495	ConW5	4L	3 5/8x4 1/4	18 20	36@2400	4 44	107
Stearns Knight F6-85	3350	Own	6S	3 1/2x5	29 40	82@2600	5 00	137 1/4
Stearns Knight H	4650	Own	8S	3 1/2x5	39 20	112@2800	4 50	137 1/4
Stearns Knight J	5600	Own	8S	3 1/2x5	39 20	112@2800	4 50	145
Studebaker Dict	1195	Own	6L	3 3/8x4 1/2	27 30	65@2800	4 30	113
Studebaker Com	1495	Own	6L	3 7/8x5	36 04	85@2800	3 31	120
Studebaker Pres	1985	Own	8L	3 3/8x4 3/8	36 45	100@2300	4 30	131
Stutz BB	3570	Own	8O	3 1/4x4 1/2	33 60	115@3600	4 70	131-45
Velie 66	1195	Own	6I	3 1/8x4 1/4	23 40	50@2900	4 80	112
Velie 77	1585	Own	6I	3 1/8x4 5/8	24 40	60@2900	4 80	118
Velie 88	2095	Lyc4MD	8L	3 1/4x4 1/2	33 80	90@3200	4 60	125
Whippet 96	535	Own	4L	3 1/8x4 5/8	15 60	32@2800	4 89	100 1/4
Willys Knight 56	1145	Own	6S	2 1/8x3 7/8	20 70	45@3000	5 11	109 1/2
Willys Knight 70	1295	Own	6S	2 7/8x4 5/8	20 70	53@3000	5 11	113 1/4
WillysKnight 66	1995	Own	6S	3 3/8x4 3/4	27 34	70@3200	4 70	126-35

Cont — Continental

Lyc — Lycoming

Pistons, Rings, Pins and Rods

1935

MAKE AND MODEL	Piston: Make or material	Piston: Weight, ounces	Piston: Length	Piston: Clearance: Top 0	Piston: Clearance: Bottom 00	Piston ring: Oil: No used	Piston ring: Oil: Width	Piston ring: Oil: Gap .0	Piston ring: Comp: No used	Piston ring: Comp: Width	Piston ring: Comp: Gap 0	Wrist pin: Diameter	Wrist pin: Clearance 00	Connecting rod: Length	Connecting rod: Clearance 00	Connecting rod: End play .0
Auburn 653	NeBo	16	3¾	098	2	2	b	13	2	1/8	13	7/8		9½	05	02
Auburn 851	NeBo	16	3¾	098	02	2	b	13	2	1/8	13	7/8		9½	05	02
Austin 4	Lyn			15	04	1	1/8	10	2	3/32	06	1/2		6	01	03
Buick 40	Own	26	3 11/32	075	2	2	5/32	10	2	1/8	10	11/32	03	7¼	1	05
Buick 50	Own	25	3½	077	17	2	5/32	10	2	1/8	10	3/4	03	9	1	05
Buick 60	Own	26¾	3 13/32	075	2	2	5/32	10	2	1/8	10	11/32	03	9¾	1	05
Buick 90	Own	30½	3 17/32	097	2	2	5/32	10	2	1/8	10	7/8	03	11	1	05
Cadillac V8	Lyn	15	3 21/32	19	23	1	3/16	07	3	3/32	07	7/8	04	10½	15	03
Cadillac V12	Lyn	11¾	3 5/16	19	2	1	3/16	07	3	3/32	07	7/8	04	9¼	15	04
Cadillac V16	Lyn	12	3 5/16	18	18	1	5/32	07	3	3/32	07	7/8	04	9¼	15	04
Chevrolet Std 6	Own	28¾	3 11/16	15	15	1	1/16	13	2	1/8	05	990		7½	05	04
Chevrolet Mast 6	Own	28¾	3 11/16	15	15	1	1/16	13	2	1/8	05	990		7½	05	04
Chrysler 6AS	Va		3 7/8		1	2	5/32	07	2	1/8	07	21/32	01	8¾	1	03
Chrysler 8AS	Va		3 7/8		1	2	5/32	07	2	1/8	07	21/32	01	9 3/16	1	03
Chrysler 8AF	Va		3 7/8		1	2	5/32	07	2	1/8	07	21/32	01	9	1	03
Chrysler Imp 8AF	Va		3 7/8		1	2	5/32	07	2	1/8	07	21/32	01	9	1	03
Chrysler IC8AF-137	Va		3 7/8		1	2	5/32	07	2	1/8	07	21/32	01	9	1	03
Chrysler IC8AF-146	NeBo		4 1/8		15	1	1/16	07	4	3/32	07	21/32	01	10	01	03
DeSoto 6AS	NeBo		3 7/8		15	2	5/32	07	2	1/8	07	21/32		8¾	1	03
DeSoto 6AF	NeBo		3 7/8		15	2	5/32	07	2	1/8	07	21/32		8¾	1	03
Dodge 6	Va		3 11/16		15	2	5/32	07	2	1/8	07	21/32		7 13/16	1	03
Duesenberg 8	RaDa	20	4 5/8	22	35	1	1/16		3	1/8		1 1/16		9 11/16	2	
Ford V8	Va		2 1/32	02	2	1	3/32	05	2	3/32	09	3/4	02	7	3	10
Graham 6	NeBo		3 21/32	26	2	1	1/16	05	2	1/8	05	13/16		7	1	
Graham Spc 6	NeBo	17	3 13/32	10	2	1	1/16	07	2	1/8	10	13/16	1	9¼	2	05
Graham 8	NeBo	16	3 1/2	10	2	1	1/16	07	2	1/8	10	13/16	01	8 5/8	2	05
Graham Super C8	NeBo	17	3 13/32	10	2	1	1/16	07	2	1/8	10	13/16	01	8 5/8	2	05
Hudson Big 6	Lyn	10 7/8	3 3/16	16	1	2	1/16	06	2	3/32	06	3/4	03	8 3/16	1	06
Hudson 8	Lyn	10 7/8	3 3/16	16	05	2	1/16	06	2	3/32	06	3/4	03	8 3/16	1	06
Hupmobile 517	NeBo		4 3/32			2	5/32	07	2	1/8	07	7/8	05	8 1/8	05	05
Hupmobile 518, 521	NeBo		4 3/32			2	5/32	07	2	1/8	07	7/8	05	8¼	05	05
Hupmobile 527	NeBo		3 7/8			2	5/32	07	2	1/8	07	7/8	05	9½	15	05
LaFayette 6	NeBo	17¾	3 7/8	19	1	2		07	2	1/8	07	7/8	01	8¾	2	08
LaSalle 8	Lyn	12 1/8	3 11/32	16	18	2	x	07	2	1/8	07	7/8	05	9	15	05
Lincoln V12	Lyn	12½	4	18	2	2	5/32	13	2	1/8	13	7/8	05	10 7/8	2	08
Nash Adv 6	NeBo	19 1/8	3 7/8	23	2	2		14	2	1/8	14	7/8	01	8¾	2	10
Nash Adv Amb 8	NeBo	16	3 11/32	20	2	2		14	2	1/8	14	7/8	01	8¾	2	08
Oldsmobile 6	Own	26¾	3 11/32	235	13	1	3/16	07	2	1/8	07	855	03	7 13/32	1	055
Oldsmobile 8	Own	24 1/8	3¾	22	13	2	b	07	2	1/8	07	856	03	9	1	055
Packard 120	NeBo	23			15	1	3/32		2	1/8		7/8		7 7/8		
Packard 8	NeBo				15	1	3/32	07	3	1/8	07	7/8	15	10 7/8	15	03
Packard Super 8	NeBo				15	1	3/32	07	3	1/8	07	7/8	15	10 7/8	15	03
Packard 12	NeBo				15	1	3/32	07	3	1/8	07	7/8	15	9	15	03
Pierce Arrow 845	NeBo		4 1/4	19	1	1	3/16	21	3	1/8	21	11/16		8 23/32	1	06
Pierce Arrow 1245	NeBo		4 1/4	19	1	1	1/16	28	3	1/8	21	7/8		9 11/16	1	06
Pierce Arrow 1255	NeBo		4 1/4	19	01	1	1/16	28	3	1/8	21	7/8		9 11/16	1	06
Plymouth 6	Perm		3 11/32			2	5/32	07	2	1/8	07	21/32		7 13/16	1	03
Pontiac 6	Own		3 13/32			1	1/16		3	1/8		11/32		7 11/16		
Pontiac 8	Own		3 7/8			1	1/16	07	3	1/8	07	11/32	02	7 11/16		
Reo 6A	Lyn	14	4	27	24	2	f	09	2	1/8	07	21/32	03	10½	15	08
Reo S	Lyn	14	4	30	06	2	f	05	2	3/32	07	21/32	03	10½	15	03
Studebaker Dict 6	Lyn	15	3¾	16	15	1	3/16	13	2	1/8	13	7/8	01	8¼	05	05
Studebaker Com 8	Lyn	13½	3¾	15	15	1	1/16	13	2	1/8	13	7/8	01	8	08	05
Studebaker Pres 8	Lyn	13½	3¾	15	15	1	1/16	13	2	1/8	13	7/8	01	8	08	05
Stutz VS16	NeBo	22	4 1/32	26	2	1	1/16	10	3	1/8	10	7/8		9¼	15	04
Stutz DV32	NeBo	22	4 1/32	26	2	1	1/16	10	3	1/8	10	7/8		9¼	15	04
Terraplane 6	Lyn	10 7/8	3 3/16	16	1	2	3/16	06	2	3/32	06	3/4	03	8 3/16	1	06
Willys 77	Own	23	3¾	07	25	1	3/16	07	3	3/32	07	7/8	04	9 3/16	01	05

1934

MAKE AND MODEL	Piston: Make or material	Piston: Weight, ounces	Piston: Length	Piston: Clearance: Top 0	Piston: Clearance: Bottom 00	Piston ring: Oil: No used	Piston ring: Oil: Width	Piston ring: Oil: Gap .0	Piston ring: Comp: No used	Piston ring: Comp: Width	Piston ring: Comp: Gap 0	Wrist-pin: Diameter	Wrist-pin: Clearance 00	Connecting-rod: Length	Connecting-rod: Clearance 00	Connecting-rod: End play .0
Auburn Std 6-52	NeBo		3¾	16	15	2	b	07	2	1/8	06	7/8	03	9½	15	04
Auburn Cust 6-52	NeBo		3¾	16	15	2	b	07	2	1/8	06	7/8	03	9½	15	04
Auburn Std 8-50	NeBo		3¾	16	15	2	b	07	2	1/8	06	7/8	03	9½	15	04
Auburn Cust 8-50	NeBo		3¾	16	15	2	b	07	2	1/8	06	7/8	03	9½	15	04
Auburn 12 165	NeBo	17	3 7/8	09	15	2	b	10	2	1/8	10	7/8	06	9 1/16	3	12
Austin	Lyn			15	4	1	1/8	10	2	3/32	10	1/4		6	1	03
Buick 34 50	CI	25	3½	077	17	2	5/32	10	2	1/8	10	3/4	03	9	1	05
Buick 34-60	CI	26¾	3 11/32	075	2	2	5/32	10	2	1/8	10	11/32	03	9¾	1	05
Buick 34 90	CI	30½	3 13/32	097	2	2	5/32	10	2	1/8	10	7/8	03	11	1	05
Cadillac V8	Lyn	15	3 21/32	19	23	1	3/16	07	3	3/32	07	7/8	04	10½	15	03
Cadillac V12	Lyn		3 5/16	19	2	1	5/32	07	3	3/32	07	7/8	04	9¼	15	04
Cadillac V16	Lyn		3 5/16	18	18	1	5/32	07	3	3/32	07	7/8	04	9¼	15	04
Chevrolet Std 6 33	CI		3 11/32	11	2	1	3/16	04	2	3/32	04	1		6 17/32	05	
Chevrolet Mast 6	CI	27¼	3 11/32	11	2	1	3/16	04	2	1/8	05	990		7½	05	04
Chrysler 6	Lyn		3 7/8		1	1	3/16	07	3	1/8	05	21/32	01	8¾	05	005
Chrysler 8	Lyn		3 7/8		15	1	3/16	07	3	1/8	07	21/32	01	9	1	005
Chrysler Imp 8	Lyn		3 7/8		15	1	3/16	07	3	1/8	07	21/32	01	9	05	005
Chrysler Imp Cust 8	NeBo	21	4 1/8		15	1	3/16	07	4	3/32	07	21/32	01	10	01	003
Continental 4				14	3	1	3/16	10	2	1/8	10	21/32	01	7	15	05
DeSoto 6	NeBo		3 7/8		15	1	3/16	07	3	1/8	07	21/32		8¾	1	003
Dodge 6	NeBo		3 11/32		15	1	5/32	07	3	d	07	21/32		7 13/16	1	003
Duesenberg	RaDa	20	4 5/8	22	35	1	3/16		3	1/8		1 1/16		9 11/16	2	
Ford V8	AlAl		2 1/32	02	2	1	3/32	05	2	3/32	10	3/4	02	7	2	12
Franklin Olympic 6	Lyn	22 5/8	4 3/64	02	2	1	1/8	13	2	1/8	13	13/16		9½	15	03
Franklin Airman 6	Lyn	22 5/8	4 3/64	02	2	1	3/16	13	2	1/8	13	13/16		9½	15	03
Franklin V12	Lyn			02	2	2	3/16	13	2	1/8	13	7/8			2	03
Graham 6	NeBo	17	3 13/32	10	2	1	1/8	07	2	1/8	10	13/16	1	9¼	2	05
Graham Std 8	NeBo	16	3 11/32	10	2	1	3/16	07	2	1/8	10	13/16	1	8 5/8	2	05
Graham Cust 8	NeBo		3 11/32	10	2	1	3/16	07	2	1/8	10	13/16	1	8 5/8	2	05
Hudson 8	Lyn	9¾	3 3/16	16	05	2	b	06	2	3/32	06	3/4	03	8 3/16	1	06
Hupmobile 417	NeBo				2	3/32	07	2	1/8	07	7/8	05	8 1/8	05	05	
Hupmobile 421 421A	NeBo			25	2	2	1/8	07	2	1/8	07	7/8	05	8¼	15	05
Hupmobile 421J	NeBo					2	3/32	07	2	1/8	07	7/8	05	8¼	05	05
Hupmobile 422	RaDa			23	2	2	1/8	07	3	d	07	3/4	05	9 1/8	15	05
Hupmobile 426	RaDa			24	2	2	1/8	07	3	d	07	7/8	05	9 1/2	15	05
Hupmobile 427	RaDa					2	3/32	07	2	1/8	07	7/8	05	9 1/2	15	05
LaFayette	NeBo	17¾	3 7/8	20	2	2	b	07	2	1/8	07	7/8	01	8¾	2	08
LaSalle 8	Lyn			16	18	1	x	07	3	3/32	07	856	03	9	15	06
Lincoln V12-136, 145	Lyn	14¼	4	18	2	2	3/32	13	3	1/8	13	7/8	05	10 7/8	2	08
Nash Big 6	NeBo	19 1/8	3 7/8	23	2	2	b	14	2	1/8	14	7/8	01	8¾	2	08
Nash Adv 8	NeBo	16	3 11/32	20	2	2	b	14	2	1/8	14	7/8	01	8¾	2	08
Nash Amb 8	NeBo	19 1/8	3 7/8	23	2	2	b	14	2	1/8	14	7/8	01	9 1/16	2	06
Oldsmobile 6	CI	28	3 7/8	85	15	1	3/16	09	2	1/8	09	856	k	7 11/16	15	06
Oldsmobile 8	CI	24½	3 11/32	08	15	2	b	07	2	1/8	07	856	k	9	15	06
Packard 8	Perm				15	1	3/32	07	3	1/8	07	7/8	15	10 7/8	15	03
Packard Super 8	Perm				15	1	3/32	07	3	1/8	07	7/8	15	10 7/8	15	03
Packard 12	NeBo				15	1	3/32	07	3	1/8	07	7/8	15	9 1/8	15	03
Pierce Arrow 840A	NeBo		4 1/4	19	1	1	1/16	28	3	1/8	15	11/16		8 23/32	1	06
Pierce Arrow 1240A	NeBo		4 1/4	19	1	1	3/16	28	3	1/8	15	7/8		9 11/16	1	06
Pierce Arrow 1248A	NeBo		4 1/4	19	1	1	1/16	28	3	1/8	15	7/8		9 11/16	1	06
Plymouth 6	Perm		3 11/32			1	3/32	07	3	1/8	07	21/32		7 11/16	1	03
Pontiac 8	CI		3 7/8	22	15	1	1/16	07	3	1/8	07	11/32	02	7 11/16	05	05
Reo S6	Lyn	13	4	30	06	1	3/16	05	3	1/8	07	21/32	03	10½	15	02
Reo Royale 8	Lyn	15	4	30	06	1	1/16	05	3	1/8	07	21/32	03	10½	15	03
Studebaker Dict 6	Lyn	15	3¾	32	15	1	3/16	13	3	1/8	13	874	01	8¼	05	05
Studebaker Com 8	Lyn	13½	3¾	30	15	1	3/16	13	3	1/8	13	874	01	8¼	05	05
Studebaker Pres 8	Lyn	13½	3¾	30	15	1	3/16	13	3	1/8	13	874	01	8	08	05
Stutz SV16	NeBo	20	4 1/32	015	25	1	3/16	07	3	1/8	07	7/8	05	9¼	2	05
Stutz DV32	NeBo	20	4 1/32	015	25	1	1/16	07	3	1/8	07	7/8	05	9¼	2	05
Terraplane 6	Lyn	9½	3 3/16	16	05	2	b	06	2	3/32	06	3/4	03	8 3/16	1	06

b — 1-1/8 , 1-1/2 '
d — 1-1/8 , 2-3/4 '
f — 1-3/16 , 1-1/2 '

x — 1 3/32 1 1/8
AlAl — Aluminum alloy
CI — Cast Iron

Lyn — Lynite
NeBo — Nelson Bohnalite
Perm — Permite

RaDa — Ray Day
Va — Various

Pistons, Rings, Pins and Rods

1933

MAKE AND MODEL	Piston: Make or material	Piston: Weight, ounces	Piston: Length	Piston: Clearance: Top .0	Piston: Clearance: Bottom 00	Piston ring: Oil: No. used	Piston ring: Oil: Width	Piston ring: Oil: Gap 0	Piston ring: Comp: No. used	Piston ring: Comp: Width	Piston ring: Comp: Gap 0	Wrist pin: Diameter	Wrist pin: Clearance 00	Connecting rod: Length	Connecting rod: Clearance 00	Connecting rod: End play .0
Auburn 8-101	NeBo	15	3¾	16	15	2	b	07	2	1/8	06	7/8	03	9½	15	04
Auburn 8-105	NeBo	15	3¾	16	15	2	n	07	2	1/8	06	7/8	03	9½	15	04
Auburn 12-161	NeBo	17	3⅞	09	15	2	b	10	2	1/8	10	7/8	06	9 7/16	3	12
Auburn 12-165	NeBo	17	3⅞	09	15	2	b	10	2	1/8	10	7/8	06	9 7/16	3	12
Austin	Lyn			15	4	1	3/32		2	3/32		1/2		6	1	03
Buick 33-50	CI	25	3½	077	17	2	5/32	10	2	1/8	10	3/4	03	9	1	05
Buick 33-60	CI	26¾	3 13/32	08	2	2	5/32	10	2	1/8	10	13/16	03	9¾	1	05
Buick 33-80, 90	CI	30½	3 23/32	08	2	2	5/32	07	2	1/8	10	7/8	03	11	1	05
Cadillac V8	MICI	23¾	3 23/32	135	2	2	f	03	3	p	05	7/8	03	10½	3	03
Cadillac V12	MICI	20⅞	3 1/16	12	2	2	b	03	2	b	05	7/8	03	9¼	3	04
Cadillac V16	MICI	19½	3 1/16	125	3	1	1/16	03	3	a	05	7/8	03	9¼		04
Chevrolet	CI		3 11/16	11	2	1	3/16	04	2	3/32	04	1		7½	05	03
Chrysler 6	Lyn		3⅞		1	1	3/32	07	4	9/64	05	11/64	01	8¾	1	03
Chrysler Royal 8	Lyn		3⅞		1	1	3/32	07	4	9/64	05	11/64	01	9	1	03
Chrysler Imp 8	Lyn		3⅞		1	1	3/32	07	4	9/64	05	11/64	01	9	05	05
Chrysler Imp Cust 8	NeBo	21	4⅛		15	1	3/32	07	4	3/32	04	11/64	01	10	1	03
Continental 4	CI					1	1/16		2	1/8		11/64		7		
Continental Light 6	CI					1	1/16		2	1/8		11/64		7		
Continental Big 6	NeBo	20½		23	02	2	f	08	2	1/8	07	7/8	02	8 3/8	15	06
Cord	NeBo	18½	3 13/16	20	15	2	1/16		2	1/8		7/8		9	15	04
Cunningham	DLCI	30	4 9/64	12	03	1	1/16	10	2	1/16	10	1/16	03	10½	2	03
DeSoto 6	NeBo	17½	3 13/16		15	1	3/32	07	3	d	07	11/64	01	8 13/16	1	03
Dodge 6	NeBo		3 11/16		15	1	3/32	07	3	1/8	07	11/64	01	7 15/16	1	03
Dodge 8	NeBo	18	3¾	22	15	1	3/32	07	3	d	07	11/64	02	8 13/16	1	03
Duesenberg	RaDa	20	4⅝	22	35	1	1/16		3	1/8		1 1/16		9 13/16	2	
Essex Terraplane 6	Lyn	9¼	3⅜	16	05	2	b	09	2	3/32	09	¾	03	8 3/16	1	06
Essex Terraplane 8	Lyn	9¼	3 3/16	16	05	2	b	09	2	3/32	09	¾	03	8 3/16	1	06
Ford B	VaAl	17⅞	3 21/32	25	2	1	5/32	08	2	1/8	12	1		7 1/2	1	08
Ford V8	VaAl		2 31/32	02	2	1	5/32	05	2	3/32	10	¾	02	7	2	12
Franklin Olympic	Lyn	22⅝	4 9/64	02	2	1	1/8	13	2	1/8	13	13/16		9½	15	03
Franklin 6	Lyn	22⅝	4 9/64	02	2	1	1/16	13	2	1/8	13	13/16		9½	15	03
Franklin 12	NeBo			02	2	2	1/16	13	2	1/8	13	7/8			2	03
Graham Std 6	NeBo	17	3 23/32	10	2	1	1/16	7	2	1/8	10	13/16	1	9¼	2	05
Graham Std Cust 8	NeBo	16	3½	10	2	1	1/16	07	2	1/8	10	13/16	1	8⅝	2	05
Hudson Super 6	Lyn	9¼	3 3/16	16	05	2	d	09	2	3/32	09	¾	03	8 3/16	1	06
Hudson 8	Lyn	9¾	3 3/16	16	05	2	d	09	2	3/32	09	¾	03	8 3/16	1	06
Hupmobile 321	NeBo					2	1/8	07	2	1/8	07	7/8		8¼	15	05
Hupmobile 322	RaDa					2	1/8	07	3	d	07	¾		9½	15	05
Hupmobile 326	RaDa					2	1/8	07	3	d	07	7/8		9½	15	05
LaSalle	MICI	23¾	3 23/32	135	2	2	f	03	3	p	05	7/8	03	10½	3	03
Lincoln V12 136	Lyn			19	3	1	1/8	13	3	1/8	13	7/8	1	10 7/8	2	05
Lincoln V12-145	Lyn	14	4	18	2	2	5/32	08	2	1/8	08	7/8	1	11 7/8	2	05
Marmon 16	RaDa	11½	3 5/8	20	3	1	1/8	07	2	1/8	07	7/8	02	8	8	05
Nash Big 6	NeBo	17¾		18	15	2	b	26	2	1/8	26	7/8	01	8¾	2	08
Nash Std 8	NeBo	14¼		15	1	2	b	26	2	1/8	26	13/16	01	8¼	2	04
Nash Spec 8	NeBo	14¼		15	1	2	b	26	2	1/8	26	13/16	01	8¼	2	04
Nash Adv 8	NeBo	16		17	15	2	b	10	2	1/8	15	13/16	01	8⅝	2	05
Nash Amb 8	NeBo	19		21	2	2	b	11	2	1/8	20	7/8	01	9 1/16	2	10
Oldsmobile 6	CI	28	3⅞	85	1	1	1/16	07	2	1/8	07	856	03	9	15	06
Oldsmobile 8	CI	30½	3 11/16	08	1	2	b	07	2	1/8	07	856	03	9	15	06
Packard 8	Perm			15	15	1	3/32	07	3	1/8	07	7/8	15	10 7/8	15	03
Packard Super 8	Perm			15	15	1	3/32	07	3	1/8	07	7/8	15	10 7/8	15	03
Packard 12	NeBo			15	15	1	3/32	07	3	1/8	07	7/8	15	9½	15	03
Pierce Arrow 836	Lyn	21	4¼	35	15	1	1/16	13	3	1/8	15	11/16		9 1/2	1	06
Pierce Arrow 1236	Lyn		4	125	05	1	1/16	13	3	1/8	13	7/8		9 11/16	1	06
Pierce Arrow 1242, 47	Lyn		4¼	22	05	1	1/16	28	3	1/8	15	7/8		9 11/16	1	06
Plymouth 6	VaAl	14	3 11/16			1	5/32	07	3	1/8	07	11/64		8 1/16	1	03
Pontiac 8	CI	26¾	3⅞	22	15	1	1/16	07	3	1/8	07	1/16	03	7 1/16	15	05
Reo S	Lyn	13	4	30	06	1	1/16	05	3	1/8	07	11/64	03	10½	15	03
Reo Rlyale	Lyn	15	4	30	06	1	1/16	05	3	1/8	07	11/64	03	10½	15	03
Rockne Six	CI	26	3¾	12	15	1	1/16	13	3	1/8	13	11/16	02	8¼	05	05
Studebaker 6	CI	27	3⅞	12	2	1	1/16	13	3	1/8	13	7/8	01	9 1/32	05	05
Studebaker Com 8	CI	25	3 11/16	12	2	1	1/16	13	3	1/8	13	7/8	01	8 1/8	05	05
Studebaker Pres 8	NeBo	15	3¾	305	15	1	1/16	13	3	1/8	13	7/8	01	8	05	05
Studebaker Spd Pres 8	NeBo	20	4¼	32	15	1	1/16	13	3	1/8	13	13/16	01	9 1/32	05	06
Stutz LAA	NeBo	20	4 1/32	26	2	1	1/16	10	3	1/8	10	7/8	22	9¼	15	04
Stutz SV16	NeBo	20	4 1/32	015	25	1	1/16	07	3	1/8	07	7/8	05	9¼	2	05
Stutz DV32	NeBo	20	4 1/32	015	25	1	1/16	07	3	1/8	07	7/8	05	9¼	2	05
Willys 77	CI				2	1	1/16	07	3	3/32	07	7/8	04	9 3/16	1	04
Willys 99	CI				2	1	1/16	06	3	3/32	07	13/16	04	8¼	1	04

1932

MAKE AND MODEL	Piston: Make or material	Piston: Weight, ounces	Piston: Length	Piston: Clearance: Top .0	Piston: Clearance: Bottom 00	Piston ring: Oil: No. used	Piston ring: Oil: Width	Piston ring: Oil: Gap .0	Piston ring: Comp: No. used	Piston ring: Comp: Width	Piston ring: Comp: Gap 0	Wrist pin: Diameter	Wrist pin: Clearance 00	Connecting rod: Length	Connecting rod: Clearance 00	Connecting rod: End play .0
Auburn 8-100	NeBo	15	3¾	16	15	2	b	10	2	1/8	06	7/8	03	9½	15	4
Auburn 12 160	NeBo	17	3⅞	11	25	2	b	10	2	1/8	08	7/8	06	9 1/16	3	2
Austin	Lyn			15	4	2	3/32		1	3/32		1/2		6	1	3
Buick 32-50	CI	22¼	3½	077	15	1	1/16	07	2	1/8	10	¾	03	9	1	5
Buick 32-60	CI	23	3 13/32	08	15	1	1/16	07	2	1/8	10	13/16	03	9¾	1	5
Buick 32 80, 90	CI	26 1/16	3 23/32	08	2	1	1/16	07	2	1/8	10	7/8	03	11	1	5
Cadillac V8	MICI	23¾	3 23/32	16	2	2	e	08	2	b	08	7/8	02	10½	3	
Cadillac V12	MICI	21	3 1/16	12	2	2	b	08	2	b	08	7/8	02	9¼	25	
Cadillac V16	MICI	19½	3 1/16	125	3	1	1/16	08	3	a	08	7/8	02	9¼	25	
Chevrolet	CI	25	3 11/16	11	2	1	1/8	02	2	3/32	02	1	05	7	1	45
Chrysler 6	NeBo	17½	3 11/16		1	1	3/32	07	3	d	07	11/64	01	8¾	1	3
Chrysler 8	NeBo	17½	3 11/16		1	1	3/32	07	3	d	07	11/64	01	9	1	3
Chrysler Imp Im Cst 8	NeBo	21	4½		15	1	3/32	07	4	3/32	04	11/64		10	1	3
Cord 8	NeBo	18½	3 11/16	20	15	2	1/16		2	1/8		7/8		9	15	4
Cunningham	DLCI	30	4 9/64	12	03	1	1/16	10	2	1/16	10	1/16	03	10½	2	3
DeSoto 6	NeBo		3¾		15	1	3/32	07	3	d	07	11/64		8 13/16		
DeVaux 6-75	AlAl	20½		23	02	2	f	08	2	1/8	07	7/8	02	8⅜	15	6
Dodge 6	NeBo	18	3 13/16		15	1	3/32	07	3	d	07	11/64		8 13/16		
Dodge 8	NeBo	18	3¾		15	1	3/32	07	3	d	07	11/64	03	8 13/16	1	3
Duesenberg	RaDa	20	4⅝	220	35	1	1/16		3	1/8		1 1/16		9 13/16	2	
Durant 6-19	NeBo	12	3 11/16	25	2	2	f	06	2	1/8	08	7/8	02	8⅜	15	2
Essex	Perm	9¼	3 3/16	12	05	2	b	09	2	3/32	09	¾	04	8 3/16	1	6
Ford A	AlAl	17⅞	3 23/32	015	02	1	5/32	13	2	1/8	13	1		7½	1	5
Franklin	Lyn	22⅝	4 9/64	02	02	1	1/8	13	2	1/8	13	13/16		9½	15	3
Graham 6	NeBo	16	3 5/32		2	1	1/16	07	2	1/8	10	13/16	05	9¼	2	5
Graham 8	NeBo	16	3 13/32		2	1	1/8	07	2	1/8	10	13/16	05	8⅝	2	5
Hudson 8	Perm	9¾	3 3/16	12	05	2	b	09	2	3/32	09	¾	04	8 3/16	1	6
Hupmobile 214	NeBo				2	1/8	10	2	1/8	07	7/8	04	8¼	15	6	
Hupmobile 216	NeBo				2	1/8	10	2	1/8	07	7/8	4	8¼	15	8	
Hupmobile 218	RaDa			10	3	1	1/8	10	2	9/64	07	¾	4	9½	15	6
Hupmobile 221	CI			05	3	1	1/8	10	2	9/64	07	7/8	04	9½	15	6
Hupmobile 222	RaDa			10	3	2	f	07	2	9/64	05	¾	04	9½	15	8
Hupmobile 225 237	RaDa			12	3	1	1/8	10	4	9/64	07	11/16	04	9½	15	6
Hupmobile 226	RaDa				2	f	07	2	9/64	05	7/8		9½	15	6	
LaSalle	MICI	23¾	3 21/32	16	2	2	j	08	2	b	08	7/8	02	10½	3	
Lincoln 12	Lyn	14	4	18	2	1	5/32	08	3	1/8	08	7/8	02	11 7/8	2	5
Marmon 8-125	RaDa	15½	4 1/32	31	3	2	b	07	2	1/8	07	7/8	04	9½	15	3
Marmon 16	RaDa	11¼	3 5/8	20	3	1	1/8	07	2	1/8	07	7/8	04	8	15	3
Nash 960	NeBo	15½	3 13/16	18	15	2	b	26	2	1/8	26	13/16	01	8¼	2	2
Nash 970	NeBo	14	3 7/16	15	1	2	e	26	2	1/8	26	¾	01	8¼	2	4
Nash 980	NeBo	14¼	3 13/16	17	15	2	b	10	2	1/8	15	13/16	01	8⅝	2	5
Nash 990	NeBo	17½	3 7/8	21	2	2	b	11	2	1/8	20	7/8	01	9 1/16	2	10
Oldsmobile 6	CI	34	3 7/8	085	1	1	1/8	07	2	1/8	07	855		9	15	35
Oldsmobile 8	CI	30	3 11/16	08	1	2	b	07	2	1/8	07	855		9	15	35
Packard 901, 902	Perm			15	15	1	3/32	07	3	1/8	07	7/8	15	10 7/8	15	3
Packard 903 904	Perm			15	15	1	3/32	07	3	1/8	07	7/8	15	10 7/8	15	3
Peerless Mast Cust 8	RaDa		3 13/16	25	3	1	3/32	08	3	1/8	08	859	02	9	15	4
Pierce Arrow 54	Lyn	21	4¼	35	15	1	1/16	13	3	1/8	15	11/16		9 1/32	1	6
Pierce Arrow 53	Lyn		4	125	05	1	1/16	13	3	1/8	13	7/8		10	1	6
Pierce Arrow 52 51	Lyn		4	125	05	1	1/16	13	3	1/8	13	7/8		10	1	6
Plymouth	Perm	18	4 1/16	03	3	1	3/32	07	3	1/8	07	¾	03	8 1/16	08	3
Pontiac 6	CI	15½	3 11/16	22	15	1	1/16	10	2	1/8	10	1 1/16	15	7 1/16	12	5
Pontiac 8	CI	30½	3 3/4	25	15	1	1/16	07	3	1/8	07	1 1/16	15	6 5/16	15	7
Reo 6-21	Lyn	14	4	25	41	2	1/16	07	2	1/8	05	983	04	10½	15	5
Reo 8-21 25	NeBo		3 5/8	16	15	1	1/16	07	3	1/8	07	11/64	03	9 3/4	05	4
Reo 31, 35	Lyn	13½	4	25	41	2	b	07	2	1/8	05	983	04	10½	15	3
Rockne Six 65	CI	26	3 11/16	12	2	1	1/16	13	3	1/8	13	13/16	02	8¼	1	5
Rockne Six 75	CI	27	3 7/8	12	2	1	1/16	13	3	1/8	13	7/8	01	10	08	5
Studebaker 6	CI	27	3 7/16	12	2	1	1/16	13	3	1/8	13	7/8	01	10	08	5
Studebaker Dict 8	CI	25	3 13/16	12	2	1	1/16	13	3	1/8	13	7/8	03	8¼	08	5
Studebaker Com 8	NeBo	14	3¾	13	15	1	1/16	13	3	1/8	13	7/8	01	8	08	5
Studebaker Pres 8	NeBo	20	4¼	22	15	1	1/16	13	3	1/8	13	13/16	01	9 1/32	08	3
Stutz LAA	NeBo	20	4 1/32	26	2	1	1/16	10	3	1/8	10	7/8	02	9¼	15	4
Stutz SV16, DV32	NeBo	20	4 1/32	26	2	1	1/16	10	3	1/8	10	7/8	02	9¼	15	4
Willys Overland 6-90	CI	26¾			15	1	1/16	07	2	1/8	04	11/16	03	8¼	1	4
Willys Overland 8-88	CI	23			2	1	1/16	07	3	3/32	08	11/64	03	8 1/16	1	4
Willys Knight 95	NeBo	14			2	1	3/32	04	3	1/8	04	11/64	03	10	1	4
Willys Knight 66D	NeBo	19¼			2	1	1/16	04	3	1/8	04	1/16	05	11	1	4

a — 1-3/16", 2-1/8"
b — 1-1/8", 1-7/16"
c — 1-1/8", 2 135
d — 2-3/64", 1-1/8"
f — 1-3/16", 1-7/16"
p — 1-1/8", 2 3/32"

AlAl — Aluminum alloy
CI — Cast iron
DLCI — DeLuxe cast iron
Lyn — Lynite
MICI—Molybdenum cast iron
NeBo — Nelson Bohnalite
NkCI — Nickel cast iron
Perm — Permite
Prm — Permite
RaDa — Ray Day
SeStl — Semi steel
VaAl—Various aluminum alloy

Valves

1935

MAKE AND MODEL	Angle of valve seat		Tappet clearance				Valve timing			
			Intake		Exhaust		Intake		Exhaust	
	Intake	Exhaust	Operating	Valve timing	Operating	Valve timing	Opens	Closes	Opens	Closes
Auburn 653	30	45	006H	010	006H	010	5B	40A	50B	10A
Auburn 851	30	45	006H	010	006H	010	5B	40A	50B	10A
Austin 4	45	45	003H		004H		DC	40A	45B	15A
Buick 40	45	45	008H	004	008H	004	4½B	54A	57½B	21A
Buick 50	45	45	008H	004	008H	004	4½B	54A	58B	30A
Buick 60	45	45	008H	004	008H	004	4½B	54A	58B	30A
Buick 90	45	45	008H	004	008H	004	4½B	54A	58B	30A
Cadillac V8	30	45	006C	006	010C	004	6B	42A	38B	2A
Cadillac V12	45	45	000	000	000	000	DC	44A	39B	5A
Cadillac V16	45	45	000	000	000	000	DC	40A	39B	5A
Chevrolet Std 6	45	45	006H	006	013H	013	4B	34A	47B	4A
Chevrolet Mast 6	45	45	006H	006	013H	013	4B	34A	47B	4A
Chrysler 6AS	45	45	006H	010	008H	010	DC	50A	48B	2A
Chrysler 8AS	45	45	006H	011	008H	012	2B	44A	46B	4A
Chrysler 8AF	45	45	006H	011	008H	012	2B	44A	46B	4A
Chrysler Imp 8AF	45	45	006H	011	008H	012	2B	44A	46B	4A
Chrysler IC8AF-137	45	45	006H	011	008H	012	2B	44A	46B	4A
Chrysler IC8AF-146	45	45	005H	008	007H	009	2B	44A	46B	4A
DeSoto 6AS	45	45	006H	010	008H	010	DC	50A	48B	2A
DeSoto 6AF	45	45	006H	010	008H	010	DC	50A	48B	2A
Dodge 6	45	45	006H	011	008H	012	6A	46A	42B	8A
Duesenberg 8	30	30	015C	025	015C	025	6B	40A	40B	14A
Ford V8	45	45	013	013	013	013	9½B	54½A	57½B	6½A
Graham 6	30	30	010H	012	010H	012	2B	42A	42B	8B
Graham Spc 6	30	35	010H	012	010H	012	DC	40A	40B	10A
Graham 8	45	45	010H	012	010H	012	DC	40A	40B	10A
Graham Super C8	45	45	010H	012	010H	012	DC	40A	40B	10A
Hudson Big 6	45	45	006H	010	008H	010	11B	60A	50B	19A
Hudson 8	45	45	006H	010	008H	010	11B	60A	50B	19A
Hupmobile 517	45	45	010H		013H		2B	51A	44B	3A
Hupmobile 518, 521	45	45	010H		013H		2B	51A	44B	3A
Hupmobile 527	45	45	018H		018H		3A	49A	41B	5A
LaFayette 6	45	45	008H	008	008H	008				
LaSalle 8	30	30	006H	015	008H	015	6A	37A	34B	5A
Lincoln V12	45	45	003C	003	005C	005	21B	47A	57B	11A
Nash Adv 6	45	45	015H	015	015H	015				
Nash Amb 8	45	45	015H	015	015H	015				
Oldsmobile 6	30	30	008H	010	010H	010	5B	45A	45B	5A
Oldsmobile 8	30	30	008H	010	010H	010	DC	42A	40B	10A
Packard 120	30	45	007H		009H		5B	39A	45B	5A
Packard 8	45	45	004H		006H		30B	65A	65B	30A
Packard Super 8	45	45	004H		006H		30B	65A	65B	30A
Packard 12	45	45	000	000	000	000	DC	45A	35B	10A
Pierce Arrow 845	45	45	000	004	000	006	5A	45A	40B	12A
Pierce Arrow 1245	45	45	000	004	000	006	19B	69A	56B	28A
Pierce Arrow 1255	45	45	000	004	000	006	19B	69A	56B	28A
Plymouth 6	45	45	006H	011	008H	012	6A	46A	42B	8A
Pontiac 6	45	45	009H	010	009H	010	5B	39A	45B	5A
Pontiac 8	30	45	009H	010	009H	010	5B	39A	45B	5A
Rel 6A	45	45	007H	012	008H	012	DC	50A	48B	2A
Reo S	45	45	007H	012	008H	012	DC	50A	48B	2A
Studebaker Dict 6	45	45	004H	010	006H	010	15B	40A	40B	5A
Studebaker Com 8	45	45	004H	010	006H	010	15B	43A	48B	10A
Studebaker Pres 8	45	45	004H	010	006H	010	15B	43A	48B	10A
Stutz SV16	45	45	028C	028	028C	028	1B	55A	49B	7A
Stutz DV32	45	45	046C	046	046C	046	5B	41A	46B	10A
Terraplane 6	45	45	006H	010	008H	010	11B	60A	50B	19A
Willys 77	45	45	004H	010	006H	010	DC	45A	40B	5A

1934

MAKE AND MODEL	Angle of valve seat		Tappet clearance				Valve timing			
			Intake		Exhaust		Intake		Exhaust	
	Intake	Exhaust	Operating	Valve timing	Operating	Valve timing	Opens	Closes	Opens	Closes
Auburn Std 6-52	30	45	006H	012	006H	012	5B	40A	50B	10A
Auburn Cust 6-52	30	45	006H	012	006H	012	5B	40A	50B	10A
Auburn Std 8-50	30	45	006H	012	006H	012	5B	40A	50B	10A
Auburn Cust 8-50	30	45	006H	012	006H	001	25B	40A	50B	10A
Auburn 12-165	30	30	010H	015	010H	015	DC	45A	50B	10A
Austin	45	45	003H		004H		DC	40A	45B	15A
Buick 34-50	45	45	004H	008	004H	008	4½B	54A	58B	30A
Buick 34-60	45	45	004H	008	004H	008	4½B	54A	58B	30A
Buick 34-90	45	45	004H	008	004H	008	4½B	54A	58B	30A
Cadillac V8	30	45	006C	006	004C	010	6B	42A	38B	2A
Cadillac V12	45	45	000	000	000	000	DC	44A	39B	5A
Cadillac V16	45	45	000	000	000	000	DC	44A	39B	5A
Chevrolet Std 6, ,33	45	45	006H	010	008H	010	4B	34A	47B	4A
Chevrolet Mast 6	45	45	006H	010	008H	010	4B	34A	47B	4A
Chrysler 6	45	45	005H	011	007H	012	DC	50A	48B	2A
Chrysler 8	45	45	005H	011	007H	012	2A	44A	46B	4A
Chrysler Imp 8	45	45	005H	011	007H	012	2A	44A	46B	4A
Chrysler Imp Cust 8	45	45	005H	007	007H	009	2A	44A	46B	4A
Continental 4	30	30	007H		007H		DC	40A	35B	5A
DeSoto 6	45	45	005H	011	007H	012	DC	50A	48B	2A
Dodge 6	45	45	005H	011	007H	012	6A	46A	42B	8A
Duesenberg	30	30	015C	025	015C	025	6B	40A	40B	14A
Ford V8	45	45	013	013	013	013	9½B	54½A	57½B	6½A
Franklin Olympic 6	30	30	003H	031	006H	031	28A	36A	52B	8B
Franklin Airman 6	30	30	003H	031	006H	031	28A	36A	52B	8B
Franklin V12	30	30	007H		007H					
Graham 6	30	45	010H	012	010H	012	DC	40A	40B	10A
Graham 8	45	45	010H	012	010H	012	DC	40A	40B	10A
Graham Cust 8	45	45	010H	012	010H	012	DC	40A	40B	10A
Hudson 8	45	45	006H	010	008H	010	11B	60A	50B	19A
Hupmobile 417	45	45	010H		013H		2B	51A	44B	3A
Hupmobile 421, 421A	45	45	010H		013H		2B	51A	44B	3A
Hupmobile 421J	45	45	010H		013H		2B	51A	44B	3A
Hupmobile 422	45	45	018H		018H		DC	40A	40B	DC
Hupmobile 426	45	45	018H		018H		3A	49A	41B	5A
Hupmobile 427	45	45	018H		018H		3A	49A	41B	5A
Lafayette Nash Blt.	45	45	008H	008	008H	008				
LaSalle 8	30	30	007H	010	009H	010	DC	42A	40B	10A
Lincoln V12-135, 145	45	45	003C	003	005C	005	21B	47A	57B	11A
Nash Big 6	45	45	015H	015	015H	015				
Nash Adv 8	45	45	015H	015	015H	015				
Nash Amb	45	45	015H	015	015H	015				
Oldsmobile 6	30	30	007H	012	009H	012	DC	50A	40B	10A
Oldsmobile 8	30	30	007H	012	009H	012	DC	42A	40B	10A
Packard 8	45	45	004H		006H		30B	65A	65B	30A
Packard Super 8	45	45	004H		006H		30B	65A	65B	30A
Packard 12	45	45	000	000	000	000	DC	45A	35B	10A
Pierce Arrow 840A	45	45	000	004	000	006	5A	45A	40B	12A
Pierce Arrow 1240A	45	45	000	004	000	006	19B	69A	56B	28A
Pierce Arrow 1248A	45	45	000	004	000	006	19B	69A	56B	28A
Plymouth 6	45	45	005H	011	007H	012	6A	46A	42B	8A
Pontiac 8	30	45	009H	010	009H	010	5B	39A	45B	5A
Reo S6	45	45	008H	012	008H	012	DC	50A	48B	2A
Reo Royale 8	45	45	008H	012	008H	012	DC	50A	48B	2A
Studebaker Dict 6	45	45	004H	010	006H	010	15B	43A	48B	10A
Studebaker Com 8	45	45	004H	010	006H	010	15B	43A	48B	10A
Studebaker Pres 8	45	45	004H	010	006H	010	15B	43A	48B	10A
Stutz SV16	45	45	028C	028	028C	028	1B	55A	49B	7A
Stutz DV32	45	45	C46C	046	046C	046	5B	41A	46B	10A
Terraplane 6	45	45	006H	010	008H	010	11B	60A	50B	19A

A — After B — Before C — Cold DC — Dead center H — Hot

Valves

1933

MAKE AND MODEL	Angle of valve seat		Tappet clearance				Valve timing			
			Intake		Exhaust		Intake		Exhaust	
	Intake	Exhaust	Operating	Valve timing	Operating	Valve timing	Opens	Closes	Opens	Closes
Auburn 8-101	30	45	006H	012	006H	012	5B	40A	50B	10A
Auburn 8 105	30	45	006H	012	006H	012	5B	40A	50B	10A
Auburn 12 161	30	30	010H	015	010H	015	DC	45A	50B	10A
Auburn 12-165	30	30	010H	015	010H	015	DC	45A	50B	10A
Austin	45	45	003H		004H		DC	40A	45B	15A
Buick 33 50	45	45	008H	008	008H	008	4½B	54A	58B	30A
Buick 33 60	45	45	008H	008	008H	008	4½B	54A	58B	30A
Buick 33 80, 90	45	45	008H	008	008H	008	4½B	54A	58B	30A
Cadillac V8	30	45	006C	004	008C	006	6B	42A	38B	2A
Cadillac V12	45	45	000	000	000	000	DC	44A	39B	5A
Cadillac V16	45	45	000	000	000	000	DC	44A	39B	5A
Chevrolet	45	45	006H	010	008H	010	4B	34A	47B	4A
Chrysler 6	45	45	005H	011	007H	012	6A	46A	42B	8A
Chrysler Royal 8	45	45	005H	011	007H	012	6A	46A	42B	8A
Chrysler Imp 8	45	45	005H	011	007H	012	6A	46A	42B	8A
Chrysler Imp Cust 8	45	45	005H	008	007H	009	6A	46A	42B	8A
Continental 4	45	45					DC	40A	35B	5A
Continental Light 6	45	45					DC	45A	50B	6A
Continental Big 6	45	45	008H		008H		5B	40A	40B	5A
Cord	30	45	006H	010	008H	010	5B	40A	50B	10A
Cunningham	45	45	015C	003	003C	003	5A	51A	41B	5A
DeSoto 6	45	45	005H	011	007H	012	6A	46A	42B	8A
Dodge 6	45	45	005H	011	007H	012	6A	46A	42B	8A
Dodge 8	45	45	005H	011	007H	012	6A	46A	42B	8A
Duesenberg	30	30	015C	025	015C	025	6B	40A	40B	14A
Essex Terraplane 6	45	45	006H		008H					
Essex Terraplane 8	45	45	006H		008H					
Ford B	45	45	012	012	018	018	8B	56A	56B	8A
Ford V8	45	45	013	013	013	013	9½B	54½A	57½B	6½A
Franklin Olym	30	30	003H	031	006H	031	28A	36A	52B	8B
Franklin 6	30	30	003H	031	006H	031	28A	36A	52B	8B
Franklin 12	30	30	007H	031	007H	031				
Graham Std 6	30	45	010H	012	010H	012	DC	40A	40B	10A
Graham Std Cust 8	45	45	010H	012	010H	012	DC	40A	40B	10A
Hudson Super 6	45	45	006H		008H					
Hudson 8	45	45	006H		008H					
Hupmobile 321	45	45	010H	014	013H	017	2B	51A	44B	3A
Hupmobile 322	45	45	018H	020	018H	026	DC	40A	40B	DC
Hupmobile 326	45	45	018H	020	018H	026	3A	49A	41B	5A
LaSalle	30	45	006C	004	008C	006	6B	42A	38B	2A
Lincoln V12 136	45	45	003C	003	005C	005	21B	47A	57B	11A
Lincoln V12-145	45	45	003C	003	005C	005	21B	47A	57B	11A
Marmon 16	45	45	008H	014	008H	014	6B	40A	40B	6A
Nash Big 6	45	45	008H	008	008H	008	5A	45A	45B	5A
Nash Std 8	45	45	008H	008	008H	008	5A	45A	45B	5A
Nash Spc 8	45	45	008H	008	008H	008	5A	45A	45B	5A
Nash Adv 8	45	45	012H	012	012H	012	15A	38A	45B	10A
Nash Amb 8	45	45	012H	012	012H	012	15A	38A	45B	10A
Oldsmobile 6	30	30	007H	010	009H	010	DC	50A	40B	10A
Oldsmobile 8	30	30	007H	010	009H	010	DC	42A	40B	10A
Packard 8	45	45	004H	005	004H	005	30B	65A	65B	30A
Packard Super 8	45	45	004H	005	004H	005	30B	65A	65B	30A
Packard 12	45	45	000	000	000	000	DC	54A	35B	10A
Pierce Arrow 836	45	45	000	010	000	010	5A	45A	40B	12A
Pierce Arrow 1236	45	45	000	004	000	006	4B	52A	40B	16A
Pierce Arrow 1242, 47	45	45	000	004	000	006	4B	52A	40B	16A
Plymouth 6	45	45	005H	011	007H	012	6A	46A	42B	8A
Pontiac 8	30	45	009H	010	009H	010	5B	39A	45B	5A
Reo S	45	45	008H	012	008H	012	DC	50A	48B	2A
Reo Royale	45	45	008H	012	008H	012	DC	50A	48B	2A
Rockne Six	45	45	004H	010	006H	010	5B	40A	40B	5A
Studebaker 6	45	45	004H	010	006H	010	5A	53A	38B	10A
Studebaker Com 8	45	45	004H	010	006H	010	15B	43A	48B	10A
Studebaker Pres 8	45	45	004H	010	006H	010	15B	43A	48B	10A
Studebaker Spd Pres 8	45	45	004H	010	006H	010	5A	45A	40B	12A
Stutz LAA	45	45	028C	028	028C	028	1B	55A	49B	7A
Stutz SV16	45	45	028C	028	028C	028	1B	55A	49B	7A
Stutz DV32	45	45	046C	046	046C	046	5B	41A	46B	10A
Willys 77	45	45	004H	010	006H	010	DC	45A	40B	5A
Willys 99	45	45	006H	010	008H	010	DC	38A	34B	4A

1932

MAKE AND MODEL	Angle of valve seat		Tappet clearance				Valve timing			
			Intake		Exhaust		Intake		Exhaust	
	Intake	Exhaust	Operating	Valve timing	Operating	Valve timing	Opens	Closes	Opens	Closes
Auburn 8-100	30	45	006H	010	006H	010	5B	40A	50B	10A
Auburn 12-160	30	30	006H	015	006H	015	DC	45A	50B	10A
Austin	45	45	003H		004H		DC	40A	45B	15A
Buick 32-50	45	45	008H	008	008H	008	4½B	54A	58B	30A
Buick 32-60	45	45	008H	008	008H	008	4½B	54A	58B	30A
Buick 32-80, 90	45	45	008H	008	008H	008	4½B	54A	58B	30A
Cadillac V8	30	45	006H	004	004H	006	6B	42A	38B	2A
Cadillac V12	45	45	000	000	000	000	DC	44A	39B	5A
Cadillac V16	45	45	000	000	000	000	DC	44A	39B	5A
Chevrllet	45	45	006H	006	008H	008	4B	34A	47B	4A
Chrysler 6	45	45	005H	011	007H	012	6A	46A	42B	8A
Chrysler 8	45	45	005H	011	007H	012	6A	46A	42B	8A
Chrysler Imp Im Cst 8	45	45	005H	008	007H	009	6A	46A	42B	8A
Cord	30	45	006H	010	008H	010	5B	40A	50B	10A
Cunningham	45	45	015C	003	003C	003	5A	51A	41B	5A
DeSoto 6	45	45	005H	011	007H	012	6A	46A	42B	8A
DeVaux 6-75	45	45	008H		008H		5B	40A	40B	5A
Dodge 6	45	45	005H	011	007H	012	6A	46A	42B	8A
Dodge 8	45	45	005H	011	007H	012	6A	46A	42B	8A
Duesenberg	30	30	015C	025	015C	025	6B	40A	40B	14A
Durant 6-19	45	45	008H	012	008H	012	5A	45A	40B	5A
Essex	45	45	003H		005H					
Ford A	45	45	013	013	013	013	7½B	48½A	51½B	5½A
Franklin	30	30	003H	031	006H	031	28A	36A	52B	8B
Graham 6	30	45	010H	012	010H	012	DC	40A	40B	10A
Graham 8	45	45	010H	012	010H	012	DC	40A	40B	10A
Hudson 8	45	45	003H		005H					
Hupmobile 214	45	45	008H	010	008H	010	4A	51A	47B	DC
Hupmobile 216	45	45	008H	010	008H	010	4A	51A	47B	DC
Hupmobile 218	45	45	007H	010	014H	020	1A	51A	47B	3A
Hupmobile 221	45	45	007H	010	014H	020	1A	51A	47B	3A
Hupmobile 222	45	45	018H	017	018H	017	DC	40A	40B	DC
Hupmobile 225 237	30	45	007H	010	014H	020	1A	51A	47B	3A
Hupmobile 226	45	45	007H	010	014H	020	1A	51A	47B	3A
LaSalle	30	45	006H	004	004H	006	6B	42A	38B	2A
Lincoln 12	45	45	003C	003	003C	003	21B	47A	57B	11A
Marmon 8-125	45	45	008H	010	008H	010	DC	50A	50B	10A
Marmon 16	45	45	008H	014	008H	014	6B	40A	40B	6A
Nash 960	45	45	008H	008	008H	008	5A	45A	45B	5A
Nash 970	45	45	008H	008	008H	008	5A	45A	45B	5A
Nash 980	45	45	012H	012	012H	012	15A	38A	45B	10A
Nash 990	45	45	012H	012	012H	012	15A	38A	45B	10A
Oldsmobile 6	30	30	007H	010	009H	010	DC	50A	40B	10A
Oldsmobile 8	30	30	007H	010	009H	010	DC	42A	40B	10A
Packard 901, 902	45	45	004H		004H		20B	65A	65B	20A
Packard 903, 904	45	45	004H		004H		20B	65A	65B	20A
Peerless Mast Cust 8	30	45	006H		010H		2A	47A	43B	2A
Pierce Arrow 54	45	45	004H		006H		5B	45A	40B	12A
Pierce Arrow 53	45	45	004H		006H		4B	52A	40B	16A
Pierce Arrow 52, 51	45	45	004H		006H		4B	52A	40B	16A
Plymouth	45	45	005H	008	007H	009	6A	46A	42B	8A
Pontiac 6	30	45	010H	010	010H	010	DC	42A	40B	10A
Pontiac 8	45	45	012H	012	012H	012	DC	40A	45B	15A
Reo 6-21	45	45	007H	007	007H	007	DC	50A	48B	2A
Reo 8-21, 825	30	45	007H	012	007H	012	5B	40A	50B	5A
Reo 31, 35	45	45	008H	012	008H	012	DC	50A	48B	2A
Rockne Six 65	45	45	004H	010	006H	010	5B	40A	40B	5A
Rockne Six 75	45	45	004H	010	006H	010	5A	53A	38B	10A
Studebaker 6	45	45	004H	010	006H	010	5A	53A	38B	10A
Studebaker Dict 8	45	45	004H	010	006H	010	DC	40A	45B	11A
Studebaker Com 8	45	45	004H	010	006H	010	15B	43A	48B	10A
Studebaker Pres 8	45	45	004H	010	006H	010	5A	45A	40B	12A
Stutz LAA	45	45	028C	028	028C	028	1B	55A	49B	7A
Stutz SV16	45	45	028C	028	028C	028	1B	55A	49B	7A
Stutz DV32	45	45	046C	046	046C	046	5B	41A	46B	10A
Willys Overland 6-90	45	45	004H	008	006H	009	7B	39A	49B	2B
Willys Overland 8-88	45	45	006H	010	008H	010	DC	38A	34B	4A
Willys Knight 95							10B	35A	45B	DC
Willys Knight 66D							10B	36A	45B	DC

A — After B — Before C — Cold DC — Dead Center H — Hot

Main Bearings and Timing Chains

1935

MAKE AND MODEL	Main bearings			Timing chain					
	Which takes thrust	End play	Clearance	Make	Length	Number of links	Width	Pitch	Adjustment
Auburn 653	3	009	001	Whity	24½	49	1	½	No
Auburn 851	3	009	001	Whity	24½	49	1	½	No
Austin 4	1	.....	.....	None	None	None	None	None	None
Buick 40	3	004	001	LkBlt	24½	49	1	½	No
Buick 50	3	004	001	None	None	None	None	None	None
Buick 60	3	004	001	None	None	None	None	None	None
Buick 90	3	004	001	None	None	None	None	None	None
Cadillac V8	3	001	0015	Morse	27	54	1¾	½	No
Cadillac V12	3	001	001	Morse	41¼	110	1½	⅜	Auto
Cadillac V16	3	001	002	Morse	41¼	110	1½	⅜	Auto
Chevrolet Std. 6	2	004	001	None	None	None	None	None	None
Chevrolet Mast. 6	2	004	001	None	None	None	None	None	None
Chrysler 6AS	4	003	001	Morse	24	48	1	½	No
Chrysler 8AS	5	002	001	Morse	24	48	1¼	½	No
Chrysler 8AF	5	002	001	Morse	24	48	1¼	½	No
Chrysler Imp. 8AF	5	002	001	Morse	24	48	1¼	½	No
Chrysler IC8AF-137	5	002	001	Morse	24	48	1¼	½	No
Chrysler IC8AF-146	9	0015	001	Morse	26½	53	1½	½	No
DeSoto 6AS	4	003	001	Morse	24	48	1	½	No
DeSoto 6AF	4	003	001	Morse	24	48	1	½	No
Dodge 6	4	003	001	Morse	24	48	1	½	No
Duesenberg 8	1	003	0015	LkBlta	47¼	126	2	⅜	Auto
Ford V8	3	002	001	None	None	None	None	None	None
Graham 6	1	004	001	LkBlt	23	46	1	½	No
Graham Spc. 6	1	004	002	LkBlt	26	52	1	½	No
Graham 8	1	006	002	LkBlt	33½	67	1¼	½	Man
Graham Super C8	1	004	002	LkBlt	34	68	1½	½	Man
Hudson Big 6	2	006	001	None	None	None	None	None	None
Hudson 8	3	006	001	None	None	None	None	None	None
Hupmobile 517	2	004	.....	Morse	25½	51	1	½	No
Hupmobile 518, 521	2	004	.....	Morse	25½	51	1	½	No
Hupmobile 527	3	003	0017	Morse	24¾	66	1¼	⅜	No
LaFayette 6	4	004	002	Diam	22½	60	Do	⅜	No
LaSalle 8	1	004	002	Whity	23	46	1¼	½	No
Lincoln V12	.....	006	0015	Morse	39	104	1½	⅜	Auto
Nash Adv. 6	4	006	002	Diam	22½	60	Do	⅜	No
Nash Adv. Amb. 8	5	004	002	Diam	23¼	62	Do	⅜	No
Oldsmobile 6	1	003	001	Whity	23½	47	1¼	½	No
Oldsmobile 8	1	003	001	Whity	23	46	1¼	½	No
Packard 120	3	.....	.....	Morse	21	56	.....	⅜	No
Packard 8	7	003	001	Morse	32	64	1½	½	Man
Packard Super 8	7	003	001	Morse	32	64	1½	½	Man
Packard 12	1	003	001	Morse	28	56	1½	½	No
Pierce Arrow 845	1	002	0015	Whity	25	50	1½	½	No
Pierce Arrow 1245	1	002	0015	Whity	21½	53	1½	½	No
Pierce Arrow 1255	1	002	0015	Whity	21½	53	1½	½	No
Plymouth 6	4	003	001	Morse	24	48	1	½	No
Pontiac 6	3	.....	.....	Morse	21	56	1	⅜	No
Pontiac 8	3	003	001	Morse	21	56	31/32	⅜	No
Reo 6A	4	005	002	Morse	24	48	1	½	No
Reo S	7	003	002	Morse	24	48	1½	½	No
Studebaker Dict. 6	1	003	0005	None	None	None	None	None	None
Studebaker Com. 8	1	003	001	None	None	None	None	None	None
Studebaker Pres. 8	1	003	001	None	None	None	None	None	None
Stutz SV16	1	004	0025	LkBltb	48	128	1½	⅜	Auto
Stutz DV32	1	004	0025	LkBltb	48	128	1½	⅜	Auto
Terraplane 6	2	006	001	None	None	None	None	None	None
Willys 77	1	004	001	LkBlt	23½	47	1¼	½	No

1934

MAKE AND MODEL	Main bearings			Timing chain					
	Which takes thrust	End play	Clearance	Make	Length	Number of links	Width	Pitch	Adjustment
Auburn Std. 6-52	.....	003	002	Whity	24½	49	1¼	½	No
Auburn Cust. 6-52	.....	003	002	Whity	24½	49	1¼	½	No
Auburn Std. 8-50	3	003	002	Whity	24½	49	1¼	½	No
Auburn Cust. 8-50	3	003	002	Whity	24½	49	1¼	½	No
Auburn 12-165	3	009	0033	Whity	42	84	1½	½	Man
Austin	1	.....	.....	None	None	None	None	None	None
Buick 34-50	3	004	001	None	None	None	None	None	None
Buick 34-60	3	004	001	None	None	None	None	None	None
Buick 34-90	3	004	001	None	None	None	None	None	None
Cadillac V8	3	001	0015	Morse	27	54	1¾	½	No
Cadillac V12	3	001	001	Morse	41¼	110	1½	⅜	Auto
Cadillac V16	3	001	002	Morse	41¼	110	1½	⅜	Auto
Chevrolet Std. 6, ,33	3	004	001	None	None	None	None	None	None
Chevrolet Mast. 6	2	004	001	None	None	None	None	None	None
Chrysler 6	4	003	001	Morse	24	48	1	½	No
Chrysler 8	5	002	001	Morse	24	48	1¼	½	No
Chrysler Imp. 8	5	002	001	Morse	24	48	1¼	½	No
Chrysler Imp. Cust. 8	9	0015	001	Morse	26½	53	1½	½	No
Continental 4	.....	005	0015	LkBlt	23	46	1	½	No
DeSoto 6	4	003	001	Morse	24	48	1	½	No
Dodge 6	4	003	001	Morse	24	48	1	½	No
Duesenberg	1	003	0015	LkBlta	47¼	126	2	⅜	Auto
Ford V8	3	004	002	None	None	None	None	None	None
Franklin Olym. 6	1	003	0015	Whity	29½	59	1¼	½	Man
Franklin Airman 6	1	003	0015	Whity	29½	59	1¼	½	Man
Franklin V12	1	003	0015	LkBlt	31	62	1¼	½	Man
Graham 6	1	006	002	LkBlt	26	52	1¼	½	No
Graham 8	1	006	002	LkBlt	33½	67	1¼	½	Man
Graham Cust. 8	1	006	002	LkBlt	33½	67	1½	½	Man
Hudson 8	3	006	001	None	None	None	None	None	None
Hupmobile 417	2	004	.....	Morse	25½	51	1	½	No
Hupmobile 421, 421A	1	003	003	Whity	30½	61	1¼	½	Man
Hupmobile 421J	2	004	.....	Morse	25½	51	1	½	No
Hupmobile 422	3	003	003	Morse	25½	51	1⅜	½	No
Hupmobile 426	3	003	003	Morse	32½	65	1½	½	Man
Hupmobile 427	3	003	0017	Morse	24¾	66	1¼	⅜	No
Lafayette Nash Blt	4	004	002	Diam	22½	60	Do	⅜	No
LaSalle 8	1	003	001	Whity	23	46	1¼	½	No
Lincoln V12-136, 145	.....	006	0015	Morse	39	104	1½	⅜	Auto
Nash Big 6	4	004	002	Diam	22½	60	Do	⅜	No
Nash Adv. 8	5	004	002	Diam	23¼	62	Do	⅜	No
Nash Amb. 8	5	004	002	Diam	24¾	66	Tr	⅜	No
Oldsmobile 6	2	0035	001	Whity	23½	47	1¼	½	No
Oldsmobile 8	1	003	001	Whity	23	46	1¼	½	No
Packard 8	7	003	001	Morse	32	64	1½	½	Man
Packard Super 8	7	003	001	Morse	32	64	1½	½	Man
Packard 12	1	003	001	Whity	28	56	1½	½	No
Pierce Arrow 840A	1	002	0015	Whity	25	50	1½	½	No
Pierce Arrow 1240A	1	002	0015	Whity	26½	53	1½	½	No
Pierce Arrow 1248A	1	002	0015	Whity	26½	53	1½	½	No
Plymouth 6	4	003	001	Morse	24	48	1	½	No
Pontiac 8	3	003	001	Morse	21	56	31/32	⅜	No
Reo S6	7	003	002	Morse	24	48	1½	½	No
Reo Royale 8	9	0065	002	Morse	31½	63	1½	½	Man
Studebaker Dict. 6	1	003	0005	Morse	23	46	1¼	½	No
Studebaker Com. 8	1	003	0005	None	None	None	None	None	None
Studebaker Pres. 8	1	003	001	None	None	None	None	None	None
Stutz SV16	1	004	0025	LkBltb	48	128	1½	⅜	Auto
Stutz DV32	1	004	0025	LkBltb	48	128	1½	⅜	Auto
Terraplane 6	2	006	001	None	None	None	None	None	None

a — Second chain, 51¾, 138 links, 1 1/16 wide, ⅜ pitch
Auto — Automatic

b — Second chain, 33¾, 90 links, 1¼ wide, ⅜ pitch.
Diam — Diamond

Do — Double
LkBlt — Link Belt
Man — Manual

Morse — Morse
Whity — Whitney.

Main Bearings and Timing Chains

1933

MAKE AND MODEL	Main Bearing Clearance	Thrust bearing		Timing chain					
		No.	End play	Make	Length	Number of links	Width	Pitch	Adjustment
Auburn 8-101	002	3	003	Whity	24½	49	1¼	½	No
Auburn 8-105	002	3	003	Whity	24½	49	1¼	½	No
Auburn 12-161	0033	3	009	LkBlt	42	84	1½	½	Man
Auburn 12-165	0033	3	009	LkBlt	42	84	1½	½	Man
Austin		1		None	None	None	None	None	None
Buick 33-50	001	3	004	None	None	None	None	None	None
Buick 33-60	001	3	004	None	None	None	None	None	None
Buick 33-80, 90	001	3	004	None	None	None	None	None	None
Cadillac V8	0015	3	001	Morse	27	54	1¾	½	No
Cadillac V12	002	3	001	Morse	41¼	110	1½	⅜	Auto
Cadillac V16	002	3	001	Morse	41¼	110	1½	⅜	Auto
Chevrolet	001	2	004	None	None	None	None	None	None
Chrysler 6	001	4	004	Morse	24	48	1¼	½	No
Chrysler Royal 8	001	5	002	Morse	24	48	1¼	½	No
Chrysler Imp 8	001	5	002	Morse	24	48	1¼	½	No
Chrysler Imp Cust 8	001	9	0015	Morse	26½	53	1½	½	No
Continental 4				LkBlt	23	46	1	½	No
Continental Light 6				LkBlt	23	46	1	½	No
Continental Big 6	0015		005	Morse	23	46	1¼	½	No
Cord	0015		003	LkBlt	37½	100	1½	⅜	Auto
Cunningham	0015	1	0037	None	None	None	None	None	None
DeSoto 6	001	4	004	Morse	24	48	1¼	½	No
Dodge 6	001	4	003	Morse	24	48	1	½	No
Dodge 8	001	5	003	Morse	24	48	1¼	½	No
Duesenberg	0015	1	003	LkBlt	47½	126	2	⅜	Auto
Essex Terraplane 6	001	2	006	None	None	None	None	None	None
Essex Terraplane 8	001	3	006	None	None	None	None	None	None
Ford B	001	3	004	None	None	None	None	None	None
Ford V8	002	3	004	None	None	None	None	None	None
Franklin Olym	0015	1	003	Whity	29½	59	1¼	½	Man
Franklin 6	0015	1	003	Whity	29½	59	1¼	½	Man
Franklin 12	0015		003	LkBlt	31	62	1¼	½	Man
Graham Std 6	002	1	006	LkBlt	34	68	1¼	½	Man
Graham Std Cust 8	002	1	006	LkBlt	33½	67	1¼	½	Man
Hudson Super 6	001	2	006	None	None	None	None	None	None
Hudson 8	001	3	006	Morse	28½	57	1¼	½	Man
Hupmobile 321		1	003	Whity	30½	61	1¼	½	Man
Hupmobile 322		3	003	Morse	25½	51	1⅜	½	No
Hupmobile 326		3	003	Morse	32½	65	1½	½	Man
LaSalle	0015	3	001	Morse	27	54	1¾	½	No
Lincoln V12	001		006	Morse	39	104	1½	½	Man
Lincoln V12	0015	7	008	Morse	39	104	1½	½	Man
Marmon 16	0025	3	003	Diam	38⅞	101	1 11/16	⅜	Man
Nash Big 6	002	4	004	Diam	19½	52	1/16	⅜	No
Nash Std. 8	002	5	004	Diam	22½	60	1/16	⅜	No
Nash Spc 8	002	5	004	Diam	22½	60	1/16	⅜	No
Nash Adv 8	002	5	003	Diam	23¼	62	⅞	⅜	No
Nash Amb 8	002	5	004	Diam	24¾	66	1 1/16	⅜	No
Oldsmobile 6	001	1	003	Whity	23½	47	1¼	½	No
Oldsmobile 8	001	1	003	Whity	23	46	1¼	½	No
Packard 8	001	7	003	Morse	32	64	1½	½	Man
Packard Super 8	001	7	003	Morse	32	64	1½	½	Man
Packard 12	001	1	003	Morse	28	56	1½	½	No
Pierce Arrow 836	0015	1	002	Whity	25	50	1½	½	No
Pierce Arrow 1236	0015	1	002	Whity	26½	53	1½	½	No
Pierce Arrow 1242, 47	0015	1	002	Whity	26½	53	1½	½	No
Plymouth 6	001	4	003	Morse	24	48	1	½	No
Pontiac 8	001	3	003	Morse	21	56	33/64	⅜	No
Reo S	002	7	003	Morse	24	48	1½	½	No
Reo Royale	002	9	0065	Morse	31½	63	1½	½	Man
Rockne Six	0015	1	003	Morse	23	46	1¼	½	No
Studebaker 6	0005	3	003	None	None	None	None	None	None
Studebaker Com 8	0005	1	003	None	None	None	None	None	None
Studebaker Pres 8	0005	1	003	None	None	None	None	None	None
Studebaker Sp Pres 8	001	1	003	None	None	None	None	None	None
Stutz LAA	0025	1	004	LkBlt	48	128	1½	⅜	Auto
Stutz SV16, DV32	0025	1	004	LkBlt	48	128	1½	⅜	Auto
Willys 77		1					1¼		No
Willys 99	0015	1	002	LkBlt	24	48	1¼	½	No

1932

MAKE AND MODEL	Main bearings			Timing chain					
	Which takes thrust	End play	Clearance	Make	Length	Number of links	Width	Pitch	Adjustment
Auburn 8-100	3	003	002	Whity	24½	49	1¼	½	No
Auburn 12-160	3	009	0033	LkBlt	42	84	1½	½	Man
Austin	1			None	None	None	None	None	None
Buick 32-50	3	004	001	None	None	None	None	None	None
Buick 32-60	3	004	001	None	None	None	None	None	None
Buick 32 80, 90	3	004	001	None	None	None	None	None	None
Cadillac V8	3	001	0015	Morse	27	54	1¾	½	No
Cadillac V12	3	001	002	Morse	41¼	110	1½	⅜	Auto
Cadillac V16	3	001	002	Morse	41¼	110	1½	⅜	Auto
Chevrolet	2	002	0005	None	None	None	None	None	None
Chrysler 6	4	001	004	Morse	24	48	1¼	4½	No
Chrysler 8	5	001	003	Morse	24	48	1¼	½	No
ChryslerImp Im Cst 8	9	001	0015	Morse	24	48	1¼	½	No
Cord 8		003	0015	LkBlt	37½	100	1½	⅜	Auto
Cunningham	1	0037	0015	None	None	None	None	None	None
DeSoto 6	4	001	004	Morse	24	48	1¼	½	No
DeVaux 6-75		005	0015	Morse	23	46	1¼	½	No
Dodge 6	4	001	004	Morse	24	48	1¼	½	No
Dodge 8	5	001	003	Morse	24	48	1¼	½	No
Duesenberg	1	003	0015	LkBlt	47¼	126	2	⅜	Auto
Durant 6-19	1	006	0015	Morse	23	46	1¼	½	No
Essex	2	006	001	Morse	28½	57	1¼	½	Man
Ford A	3	004	002	None	None	None	None	None	None
Franklin	1	003	0015	Whity	29½	59	1¼	½	Man
Graham 6	1	006	0024	LkBlt	34	68	1¼	½	Man
Graham 8	1	006	002	LkBlt	33½	67	1¼	½	Man
Hudson 8	3	006	001	Morse	28½	57	1¼	½	Man
Hupmobile 214	1	003		Morse	30½	61	1¼	½	Man
Hupmobile 216	1	003		Whity	30½	61	1¼	¼	Man
Hupmobile 218	3	003		Morse	25½	51	1⅜	½	No
Hupmobile 221	3	004		Morse	32½	65	1½	½	Man
Hupmobile 222	3	003		Morse	25½	51	1⅜	½	No
Hupmobile 225 237	3	004		Morse	32½	65	1½	½	Man
Hupmobile 226	3	003		Morse	32½	65	1½	½	Man
LaSalle	3	007	0015	Morse	27	54	1¾	½	No
Lincoln 12	7	008	0015	Morse	39	104	1½	⅜	Auto
Marmon 8-125	3	003	0025	Diam	24¾	66	11/16	⅜	No
Marmon 16	3	002	0025	Diam	37⅞	101	1 11/16	⅜	Man
Nash 960	4	004	002	None	None	None	None	None	None
Nash 970	5	004	002	Diam	22½	60	1/16	⅜	No
Nash 980	5	003	002	Diam	23¼	62	⅞	⅜	No
Nash 990	5	004	002	Diam	24¾	66	1 1/16	⅜	No
Oldsmobile 6	1	003	001	Whity	23½	47	1¼	½	No
Oldsmobile 8	1	003	001	Whity	23½	47	1¼	½	No
Packard 901, 902		003	001	Morse	32	64	1½	½	Man
Packard 903, 904		003	001	Morse	32	64	1½	½	Man
Peerless Mast Cust 8	1	004	001	LkBlt	25½	51	1½	½	No
Pierce Arrow 54	1	002	0015	Whity	25	50	1½	½	No
Pierce Arrow 53	1	002	0015	Whity	26½	53	1½	½	No
Pierce Arrow 52, 51	1	002	0015	Whity	26½	53	1½	½	No
Plymouth	3	001	003						
Pontiac 6	2	003	002	Morse	22	44	1¼	½	No
Pontiac 8	2	003	0015	LkBlt	23	46	1¼	½	No
Reo 6-21	7	004	002	Morse	31½	63	1½	½	Man
Reo 8-21, 25	1	004	001	LkBlt	30	75	1¼	4	Man
Reo 31, 35	9	004	002	Morse	31½	63	1½	½	Man
Rockne Six 65	1	003	001	Morse	12¼	62	¾	⅜	No
Rickne Six 75	3	003	001	Whity	26½	53	1¼	½	No
Studebaker 6	3	003	0005	Whity	26½	53	1¼	½	No
Studebaker Dict 8	1	003	001	None	None	None	None	None	None
Studebaker Com 6	1	003	001	None	None	None	None	None	None
Studebaker Pres 8	1	003	001	None	None	None	None	None	None
Stutz LAA	1	004	0025	LkBlt	48	128	1½	⅜	Auto
Stutz SV16 DV32	1	004	0025	LkBlt	48	128	1½	⅜	Auto
Willys Overland 6-90	4	004	0015	Va	24	48	1¼	½	No
Willys Overland 8-88	3	004	002	Va	24	48	1¼	½	No
Willys Knight 95	4	004	002	Va	36¾	98	1¼	⅜	Auto
Willys Knight 66D	4	004	002	Va	42	112	1½	⅜	Auto

Auto — Automatic Diam — Diamond LkBlt — Link-Belt Man — Manual Va — Various Whity — Whitney

Ignition, Battery and Starter Ring Gear

1935

MAKE AND MODEL	Ignition unit: Make	Degrees advance: Manual	Degrees advance: Automatic	Degrees advance: Vacuum	Ignition unit: Breaker Gap	Ignition unit: Firing order	Spark plug: Thread	Spark plug: Model	Spark plug: Make	Spark plug: Gap	Battery: Capacity	Battery: Terminal grounded	Ring Gear: No of teeth	Ring Gear: Width of tooth face
Auburn 653	AL	0	10	0	018	153624	14M	J6	Ch	025	90	P	110	7/8
Auburn 851	AL	0	10	0	013	16258374	14M	J6	Ch	025	105	P	110	7/8
Austin 4	AL			0	020	1342	18M	C7	Ch	025	60	P	80	5/8
Buick 40	DR	10	26	10	013	16258374	18M	H9	AC	020	100	N	146	44/64
Buick 50	DR	12	17	10	013	16258374	18M	H9	AC	020	100	N	150	47/64
Buick 60	DR	12	26	10	013	16258374	18M	H9	AC	020	120	N	156	54/64
Buick 90	DR	12	26	10	013	16258374	18M	H9	AC	020	135	N	156	54/64
Cadillac V8	DR	20	22	0	013	E	18M	G6	AC	025	130	P	113	5/8
Cadillac V12	DR	20	38	0	018	C	18M	G6	AC	025	160	P	113	5/8
Cadillac V16	DR	20	34	0	014	D	18M	G6	AC	025	190	P	113	5/8
Chevrolet Std 6	DR	20	28	12	021	153624	14M	K11	AC	032	90	N	132	1/2
Chevrolet Mast 6	DR	20	28	12	021	153624	14M	K11	AC	032	90	N	132	1/2
Chrysler 6AS	AL	0	16	Y	020	153624	14M	K9	AC	025	119	P	146	1/2
Chrysler 8AS	AL	0	26	Y	018	16258374	14M	KL9	AC	025	119	P	146	1/2
Chrysler 8AF	AL	0	26	Y	018	16258374	14M	KL9	AC	025	136	P	146	11/16
Chrysler Imp 8AF	AL	0	26	0	018	16258374	14M	KL9	AC	025	136	P	146	1/2
Chrysler IC8AF 137	AL	0	26	0	018	16258374	14M	KL9	AC	025	136	P	146	1/2
Chrysler IC8AF 146	AL	0	18	0	018	16258374	14M	KL9	AC	025	170	P	124	11/16
DeSoto 6AS	AL	0	16	Y	020	153624	14M	KL9	AC	025	119	P	146	1/2
DeSoto 6AF	AL	0	30	Y	020	153624	14M	KL9	AC	025	119	P	146	1/2
Dodge 6	AL	20	30	Y	020	153624	14M	K9	AC	025	90	P	146	1/2
Duesenberg 8	DR	20	42	0	018	16258374	18M	18	Ch	025	143	N	119	11/16
Ford V8	Ma	0	22	0	015	15486372	18M	C7	Ch	025	96	P	112	3/8
Graham 6	DR	0		0		153624	18M		Ch		86	P	130	9/16
Graham Spc 6	DR	0	13	0	018	153624	18M	C7	Ch	025	84	P	136	9/16
Graham 8	DR	0	13	10	018	16258374	18M	C7	Ch	025	100	P	136	9/16
Graham Super C8	DR	0	14	10	018	16258374	18M	C7	Ch	025	100	P	136	9/16
Hudson Big 6	AL	0	20	0	018	153624	14M	J7S	Ch	022	105	P	107	33/64
Hudson 8	AL	0	20	0	018	16258374	14M	J7S	Ch	022	125	P	134	37/64
Hupmobile 518	AL			0	015	153624	18M	C7	Ch	028	100	P	112	9/16
Hupmobile 521	AL			0	015	153624	18M	C7	Ch	028	113	P	112	9/16
Hupmobile 527	AL			0	020	14738526	18M	C7	Ch	028	121	P	109	11/16
LaFayette 6	AL	0	26	0	020	153624	18M	C15	Ch	018	110	P	104	1/2
LaSalle 8	DR	20	28	0	018	16258374	18M	G6	AC	025	130	P	145	9/16
Lincoln V12	AL			0	020	C	18M	7	Ch	025	147	N	116	5/8
Nash Adv 6	AL	0		0	020	153624	14M	K12	AC	022	115	P	104	1/2
Nash Adv Amb 8	AL	0		0	020	16258374	14M	K12	AC	022	133	P	113	9/32
Oldsmobile 6	DR	0	23	0	018	153624	18M	G9	AC	025	100	N	145	1/2
Oldsmobile 8	DR	0	24	0	018	16258374	18M	G9	AC	025	114	N	145	1/2
Packard 120	AL	0		0	018	16258374	14M		AC	025	114	P	140	
Packard 8	DR	0	11	0	018	16258374	14M	K7	AC	025	150	P	118	11/16
Packard Super 8	DR	0	19	0	018	16258374	14M	K7	AC	025	150	P	118	11/16
Packard 12	DR	0		0	018	G	14M	K7	AC	025	150	P	118	11/16
Pierce Arrow 845	DR	33	16	0	018	16258374	14M	C45	Ch	022	140	P	112	9/16
Pierce Arrow 1245	DR	33	12	0	018	C	14M	JN5	Ch	022	160	P	113	9/16
Pierce Arrow 1255	DR	33	12	0	018	C	14M	JN5	Ch	022	160	P	113	9/16
Plymouth 6	AL	0	18	Y	020	153624	14M	K9	AC	025	86	P	146	1/2
Pontiac 6	DR	0	20	15	018	153624	14M	K7	AC	025	94	N	139	1/2
Pontiac 8	DR	0	20	20	018	16258374	14M	K7	AC	025	107	N	139	1/2
Reo 6A	DR	0	17	0	020	153624	18M	C7A	Ch	025	102	N	150	1/2
Reo S	DR	0	16	0		153624	18M	C7	Ch	025	102	N	118	3/4
Studebaker Dict 6	AL	0	21	6	020	153624	18M	8	Ch	023	102	P	102	1/2
Studebaker Com 8	DR	0	27	6	020	16258374	18M	8	Ch	023	102	P	105	1/2
Studebaker Pres 8	DR	0	27	6	020	16258374	18M	8	Ch	023	136	P	105	1/2
Stutz SV16	DR	20	30	0	017	16258374	18M	18	Ch	025	150	N	118	11/16
Stutz DV32	DR	40	33	0	020	16258374	18M	18	Ch	022	150	N	118	11/16
Terraplane 6	AL	0	20	0	018	153624	14M	J7S	Ch	022	105	P	107	11/32
Willys 77	AL	0	25	0	018	1342	18M	C7	Ch	024	96	N	96	11/16

1934

MAKE AND MODEL	Ignition unit: Make	Degrees advance: Manual	Degrees advance: Automatic	Degrees advance: Vacuum	Ignition unit: Breaker Gap	Ignition unit: Firing order	Spark plug: Thread	Spark plug: Model	Spark plug: Make	Spark plug: Gap	Battery: Capacity	Battery: Terminal grounded	Ring Gear: No of teeth	Ring Gear: Width of tooth face
Auburn Std 6-52	AL	0		0	018	153624	14M	J6	Champ	026	105	P	110	
Auburn Cust 6-52	AL	0		0	018	153624	14M	J6	Champ	026	105	P	110	
Auburn Std 8-50	AL	0		0	018	16258374	18M	C7S	Champ	026	105	P	110	
Auburn Cust 8 50	AL	0		0	018	16258374	14M	J6	Champ	026	105	P	110	
Auburn 12-165	DR	25	20	0	018	C	18M	C7S	Champ	025	120	P	112	11/16
Austin	AL			0	020	1342	18M	C7	Champ	025	60	P	80	5/8
Buick 34-50	DR		17	12	013	16258374	18M	H9	AC	020	100	N	150	47/64
Buick 34 60	DR		26	12	013	16258374	18M	H9	AC	020	120	N	156	54/64
Buick 34-90	DR		26	12	013	16258374	18M	H9	AC	020	135	N	156	54/64
Cadillac V8	DR	20	22	0	013	E	18M	G7	AC	025	130	P	113	5/8
Cadillac V12	DR	20	38	0	018	C	18M	G7	AC	025	160	P	113	5/8
Cadillac V16	DR	20	34	0	014	D	18M	G7	AC	028	190	P	113	5/8
Chevrolet Std 6, 33	DR	0	36	12	018	153624	14M	K9	AC	032	90	N	104	1/2
Chevrolet Mast 6	DR	0	36	17	018	153624	14M	K11	AC	032	90	N	132	1/2
Chrysler 6	DR	0	16	0	020	153624	14M	K12	AC	025	121	P	146	11/16
Chrysler 8	DR	22	26	0	018	16258374	14M	K12	AC	025	140	P	146	11/16
Chrysler Imp 8	DR	22	26	0	018	16258374	14M	K12	AC	025	140	P	146	11/16
Chrysler Imp Cust 8	DR	0	18	0	018	16258374	14M	K12	AC	025	178	P	124	11/16
Continental 4	AL	15	26	0	020	1342	18M	68	AC	028	78	N		
DeSoto 6	DR	20	30	0	018	153624	14M	K12	AC	025	100	P	146	11/16
Dodge 6	DR	20	30	0	018	153624	14M	K12	AC	025	90	P	146	1/2
Duesenberg	DR	20	42	0	018	16258374	18M	18	Champ	025	143	N	119	11/16
Ford V8	Ma	0	22	0	015	15486372	18M	C7	Champ	025	80	P	112	3/8
Franklin Olympic 6	DR	25	31	0	020	142635	18M	C7	Champ	025	102	P	125	3/4
Franklin Airman 6	DR	25	31	0	020	142635	18M	C7	Champ	025	143	P	125	3/4
Franklin V12	DR	15	14	0	020	A	18M	C7	Champ	025	153	P		
Graham 6	DR	0	21	0	018	153624	18M	C7	Champ	025	86	P	108	9/16
Graham 8	DR	0	12	0	018	16258374	18M	C7	Champ	025	100	P	108	9/16
Graham Cust 8	DR	0	12	0	018	16258374	18M	C7	Champ	025	100	P	108	9/16
Hudson 8	AL	0	20	0	020	16258374	14M	J7	Champ	022	100	P	134	37/64
Hupmobile 417	AL				015	153624	18M	C7	Champ	025	100	P	112	9/16
Hupmobile 421A	AL			0	015	153624	18M	C7	Champ	028	119	P	112	9/16
Hupmobile 421J	AL				015	153624	18M	C7	Champ	025	100	P	112	9/16
Hupmobile 422	AL			0	020	14738526	18M	C7	Champ	028	119	P	109	11/16
Hupmobile 426	AL			0	020	14738526	18M	C7	Champ	028	119	P	109	11/16
Hupmobile 427	AL				020	14738526	18M	C7	Champ	028	121	P	109	11/16
LaFayette	AL	0	26	0	020	153624	18M	C15	Champ	018	110	P	104	1/2
LaSalle 8	DR	0		0	018	16258374	18M	G9	AC	025	130	P	145	9/16
Lincoln V12 136, 145	AL			0	020	C	18M	7	Champ	025	138	N	116	5/8
Nash Big 6	AL	0		0	020	153624	18M	J9	AC	020	100	P	104	1/2
Nash Adv 8	AL	0		0	020	16258374	18M	G10	AC	020	116	P	113	9/32
Nash Amb 8	AL	0		0	020	16258374	18M	G10	AC	020	133	P	113	9/32
Oldsmobile 6	DR	0		0	018	153624	18M	G9	AC	025	100	N	145	1/2
Oldsmobile 8	DR	0	25	0	018	16258374	18M	G9	AC	025	114	N	145	1/2
Packard 8	NE	0	11	0	018	16258374	14M	K7	AC	025	144	P	118	11/16
Packard Super 8	NE	0	19	0	018	16258374	14M	K7	AC	025	144	P	118	11/16
Packard 12	NE	0		0	018	G	14M	K7	AC	025	144	P	118	11/16
Pierce Arrow 840A	DR	33	16	0	018	16258374	14M	C45	Champ	022	140	P	112	9/16
Pierce Arrow 1240A	DR	33	12	0	018	C	14M	JN5	Champ	022	160	P	113	9/16
Pierce Arrow 1248A	DR	33	12	0	018	C	14M	JN5	Champ	022	160	P	113	9/16
Plymouth 6	DR	0	18	0	020	153624	14M	K12	AC	025	84	P	146	1/2
Pontiac 8	DR	0	22	20	013	16258374	14M	K7	AC	022	107	N	139	1/2
Reo S6	DR	25	18	0	020	153624	18M	C7	Champ	025	102	N	118	3/4
Reo Royale 8	DR	25	22	0	020	16258374	18M	C7	Champ	025	136	N	111	3/4
Studebaker Dict 6	AL	0	21	6	020	153624	18M	7	Champ	023	102	P	102	1/2
Studebaker Com 8	DR	0	27	6	020	16258374	18M	7	Champ	023	102	P	105	1/2
Studebaker Pres 8	DR	0	27	6	020	16258374	18M	7	Champ	023	136	P	105	1/2
Stutz SV16	DR	18	30	0	017	16258374	18M	18	Champ	025	145	N	118	11/16
Stutz DV32	DR	20	35	0	020	16258374	18M	18	Champ	022	145	N	118	11/16
Terraplane 6	AL	0	20	0	020	153624	M	J7	Champ	022	100	P	107	11/32

A — 1R, 6L, 4R, 3L, 2R 5L, 6R, 1L, 3R, 4L, 5R, 2L
AL — Electric Auto-Lite Co
C — 1L, 2R, 5L, 4R, 3L, 1R, 6L, 5R, 2L, 3R, 4L, 6R

Ch, Champ — Champion
D — 1L, 4R, 5L, 7R, 2L, 3R, 6L, 1R, 8L, 5R, 4L, 2R, 7L, 6R, 3L, 8R

DR — Delco-Remy
G — 1R 6L, 5R, 2L 3R, 4L, 6R 1L 2R 5L 4R, 3L
M — Metric

Ma — Mallory
N — Negative
P — Positive

Ignition, Battery and Starter Ring Gear

1933

MAKE AND MODEL	Ignition unit: Make	Degrees advance: Manual	Degrees advance: Automatic	Degrees advance: Vacuum	Ignition unit: Breaker Gap	Ignition unit: Firing order	Spark plug: Thread	Spark plug: Model	Spark plug: Make	Spark plug: Gap	Battery: Capacity	Battery: Terminal grounded	Ring Gear: No. of teeth	Ring Gear: Width of tooth-face
Auburn 8-101	DR	15	24	0	018	16258374	7/8	2	Champ	026	104	P	97	7/8
Auburn 8-105	DR	15	24	0	018	16258374	7/8	2	Champ	026	104	P	110	
Auburn 12-161	DR	25	20	0	018	C	Met	C7S	Champ	025	121	P	112	11/16
Auburn 12-165	DR	25	20	0	018	C	Met	C7S	Champ	025	121	P	112	11/16
Austin	AL			0	020	1342	Met	C7	Champ	025	53	P	80	5/8
Buick 33 50	DR	24	17	0	015	16258374	Met	H9	AC	020	100	N	150	13/16
Buick 33-60	DR	24	26	0	015	16258374	Met	H9	AC	020	120	N	15	13/16
Buick 33-80, 90	DR	24	26	0	015	16258374	Met	H9	AC	020	135	N	15	13/16
Cadillac V8	DR	0	18	0	018	E	Met	D8	AC	025	130	P	113	5/8
Cadillac V12	DR	0	40	0	018	C	Met	D8	AC	025	160	P	113	5/8
Cadillac V16	DR	0	25	0	014	D	Met	D8	AC	028	190	P	113	5/8
Chevrolet	DR	0	36	12	018	153624	Met	K9	AC	032	90	N	104	1/2
Chrysler 6	DR	0	16	0	020	153624	Met	K12	AC	025	100	P	146	11/16
Chrysler Royal 8	DR	0		0	181	16258374	Met	K12	AC	025	121	P	146	11/16
Chrysler Imp 8	DR	0	12	0	018	16258374	Met	K12	AC	025	117	P	146	11/16
Chrysler Imp Cust 8	DR	0	18	0	018	16258374	Met	K12	AC	025	153	P	124	11/16
Continental 4	AL	15	26	0	022	1342	Met	68	AC	028	85	N		
Continental Light 6	AL	15	26	0	022	153624	Met	68	AC	028	85	N		
Continental Big 6	AL	20	24	0	018	153624	Met	G10	AC	025	119	N	146	1/2
Cord	DR	12	15	0	018	16258374	Met	C7	Champ	025	153	P	112	7/8
Cunningham	NE	25	15	0	018	15486372	7/8	C2	Champ	031	136	N	132	7/8
DeSoto 6	DR	0	14	0	020	153624	Met	K12	AC	025	90	P	146	11/16
Dodge 6	DR	0	16	0	020	153624	Met	K12	AC	025	84	P	146	1/2
Dodge 8	DR	0	14	0	020	16258374	Met	K12	AC	025	117	P	115	11/16
Duesenberg	DR	20	18	0	018	16258374	Met	8SP	Champ	025	143	N	119	11/16
Essex, Terraplane 6	AL	0	20	0	020	153624	Met	K9	AC	022	86	N	107	3/8
Essex, Terraplane 8	AL	0	24	0	020	16258374	Met	K9	AC	022	86	N	107	3/8
Ford B	AL	0	29		018	1243	7/8	C4X	Champ	027	80	P	112	3/8
Ford V8	Ma	0	22	0	015	15486372	7/8	C4X	Champ	025	80	P	112	3/8
Franklin Olym	DR	25	31	0	020	142635	Met	C7	Champ	025	102	P	125	3/4
Franklin 6	DR	25	31	0	020	142635	Met	C7	Champ	025	165	P	125	3/4
Franklin 12	DR			020		A	Met	C7	Champ	025	175	P		
Graham Std 6	DR	0	12	0	018	153624	7/8	C5	Champ	025	84	P	108	15/16
Graham Std Cust 8	DR	0	12	0	018	16258374	7/8	C5	Champ	025	100	P	108	15/16
Hudson Super 6	AL	0	20	0	020	153624	Met	G8	AC	022	105	N	107	3/8
Hudson 8	AL	0	24	0	020	16258374	Met	G8	AC	022	105	N	107	3/8
Hupmobile 321	AL			0	015	153624	Met	C7	Champ	028	119	P	112	15/16
Hupmobile 322	AL			0	020	14738526	Met	C7	Champ	028	119	P	109	11/16
Hupmobile 326	AL			0	020	14738526	Met	C7	Champ	028	119	P	109	11/16
LaSalle	DR	0	18	0	018	E	Met	D8	AC	025	130	P	113	5/8
Lincoln V12-136	AL			0	020	C	7/8	C4	Champ	025	135	N	116	5/8
Lincoln V12-145	AL			0	020	C	7/8	C4	Champ	025	135	N	116	5/8
Marmon 16	DR	15	30	0	018	H	Met	C7	Champ	022	153	P	116	5/8
Nash Big 6	AL	0	26	0	020	153624	Met	G10	AC	018	115	N	104	1/2
Nash Std 8	AL	0	26	0	020	16258374	Met	G10	AC	018	115	N	104	1/2
Nash Spec 8	AL	0	32	0	020	16258374	Met	K12	AC	018	120	N	104	1/2
Nash Adv 8	AL	20	16	0	025	16258374	Met	K12	AC	020	133	P	113	13/16
Nash Amb 8	AL	9	16	0	025	16258374	Met	J9	AC	019	152	P	113	13/16
Oldsmobile 6	DR	0	27	0	018	153624	Met	G9	AC	025	86	N	145	7/8
Oldsmobile 8	DR	0	26	0	018	16258374	Met	G9	AC	025	98	N	145	7/8
Packard 8	NE	0	11	0	018	16258374	Met	K7	AC	025	144	P	118	11/16
Packard Super 8	NE	0	19	0	018	16258374	Met	K7	AC	025	144	P	118	11/16
Packard 12	NE	0		0	018	G	Met	K7	AC	025	144	P	118	11/16
Pierce Arrow 836	DR	33	16	0	018	16258374	7/8	C45	Champ	025	140	P	112	7/8
Pierce Arrow 1236	DR	33	12	0	018	C	Met	JN5	Champ	022	160	P	113	7/8
Pierce Arrow 1242, 47	DR	33	12	0	018	C	Met	JN5	Champ	022	160	P	113	7/8
Plymouth 6	DR	0	16	0	020	153624	Met	K12	AC	025	84	P	146	1/2
Pontiac 8	DR	0	23	0	013	16258374	Met	K10	AC	018	120	N	139	1/2
Reo S	DR	25	18	0	020	153624	Met	C7	Champ	025	102	N	118	3/4
Reo Royale	DR	25	18	0	020	16258374	Met	C7	Champ	025	136	N	111	3/4
Rockne Six	AL	0	21	0	020	153624	Met	7	Champ	025	102	P	102	1/2
Studebaker 6	DR	15	23	6	020	142635	Met	8	Champ	025	102	P	105	1/2
Studebaker Com 8	DR	25	27	6	020	16258374	Met	8	Champ	025	102	P	105	1/2
Studebaker Pres 8	DR	25	27	6	020	16258374	Met	8	Champ	025	136	P	105	1/2
Studebaker Spd Prs 8	DR	25	21	6	020	16258374	Met	8	Champ	025	136	P	112	7/8
Stutz LAA	DR	20	30	0	017	153624	Met	18	Champ	025	145	N	118	11/16
Stutz SV16	DR	18	30	0	017	16258374	Met	18	Champ	025	145	N	118	11/16
Stutz DV32	DR	20	35	0	020	16258374	Met	18	Champ	022	145	N	118	11/16
Willys 77	AL	0	25	0	018	1342	Met	C7	Champ	027	96	N	96	
Willys 99	AL	10	8	0	018	153624	Met	C7	Champ	027	102	N	101	

1932

MAKE AND MODEL	Ignition unit: Make	Degrees advance: Manual	Degrees advance: Automatic	Degrees advance: Vacuum	Ignition unit: Breaker Gap	Ignition unit: Firing order	Spark plug: Thread	Spark plug: Model	Spark plug: Make	Spark plug: Gap	Battery: Capacity	Battery: Terminal grounded	Ring Gear: No. of teeth	Ring Gear: Width of tooth-face
Auburn 8-100	DR	15	24		018	16258374	7/8	C4	Champ	026	104	P	97	3/4
Auburn 12-160	DR	25	20		018	C	Met	C7	Champ	025	121	P	112	11/16
Austin	AL		0		020	1342	Met	10	Champ	025	43	P	80	5/8
Buick 32-50	DR	24	17		020	16258374	Met	J12	AC	025	100	N	150	13/16
Buick 32-60	DR	24	26		020	16258374	Met	J12	AC	025	120	N	156	13/16
Buick 32-80, 90	DR	24	26		020	16258374	Met	J12	AC	025	135	N	156	13/16
Cadillac V8	DR	0	18		018	E	Met	D8	AC	025	130	P	113	5/8
Cadillac V12	DR	0	30		018	C	Met	D8	AC	025	160	P	113	5/8
Cadillac V16	DR	0	32		014	D	Met	D8	AC	028	190	P	113	5/8
Chevrolet	DR	15	26		018	153624	Met	G12	AC	025	90	N	104	3/4
Chrysler 6	DR	0	14		020	153624	Met	K12	AC	025	100	P	115	11/16
Chrysler 8	DR	0	12		020	16258374	Met	G11	AC	025	117	P	115	11/16
Chrysler Im Imp Cst 8	DR	22	18		020	16258374	Met	Y	AC	025	153	P	124	11/16
Cord 8	DR	12	15		018	16258374	Met	C7	Champ	025	104	P	112	7/8
Cunningham	NE	25	15		018	15486372	7/8	C2	Champ	031	136	N	132	7/8
DeSoto 6	DR	0	14		020	153624	Met	K12	AC	025	84	P	115	11/16
DeVaux 6-75	AL	20	24		018	153624	Met	C7	Champ		119	N	146	1/2
Dodge 6	DR	0	14		020	153624	Met	K12	AC	025	84	P	115	11/16
Dodge 8	DR	0	14		020	16258374	Met	K12	AC	025	117	P	115	11/16
Duesenberg	DR	20	18		018	16258374	Met	8SP	Champ	025	143	N	119	11/16
Durant 619	AL	10	12		020	153624	Met	100	AC	025	87	N	112	5/8
Essex	AL	0			020	153624	Met	G8	AC	025	105	N	107	3/8
Ford A	AL		0		018	1243	7/8	3X	Champ	025	80	P	112	3/8
Franklin	DR	25	31		020	142635	Met	C7	Champ	025	165	P	125	3/4
Graham 6	DR		16		020	153624	7/8	C5	Champ	025	84	P	108	15/16
Graham 8	DR	0	16		020	16258374	7/8	C5	Champ	025	100	P	108	15/16
Hudson 8	AL	0			020	16258374	Met	G8	AC	025	105	N	107	5/8
Hupmobile 214	AL				015	153624	Met	C7	Champ	025	100	P	112	3/4
Hupmobile 216	AL				015	153624	Met	C7	Champ	025	121	P	112	15/16
Hupmobile 218	AL				020	14738526	Met	C7	Champ	028	110	P	109	7/8
Hupmobile 221	AL				020	14738526	Met	8	Champ	028	110	P	109	11/16
Hupmobile 222	AL				020	14738526	Met	C7	Champ	028	121	P	109	11/16
Hupmobile 225, 237	AL				020	14738526	Met	8	Champ	048	132	P	113	11/16
Hupmobile 226	AL				020	14738526	Met	C7	Champ	028	121	P	109	11/16
LaSalle	DR	0	18		018	E	Met	D8	AC	025	130	P	113	5/8
Lincoln 12	AL				020	C	7/8	C4	Champ	025	135	N	116	5/8
Marmon 8-125	DR	20	25		022	16258374	Met	8S	Champ	025	140	P	108	11/16
Marmon 16	DR	15	30		015	H	Met	C7	Champ	022	167	P	116	5/8
Nash 960	AL	0	32		020	153624	Met	K12	AC	018	105	N	104	1/2
Nash 970	AL	0	32		020	16258374	Met	K12	AC	018	120	N	104	1/2
Nash 980	AL	20	16		025	16258374	Met	K12	AC	015	120	P	113	11/16
Nash 990	AL	9	16		02[illegible]	16258374	Met	J9	AC	019	152	P	113	11/16
Oldsmobile 6	DR	0	22		018	153624	Met	G11	AC	025	86	N	145	7/8
Oldsmobile 8	DR	0	22		018	16258374	Met	G11	AC	025	98	N	145	7/8
Packard 901, 902	NE	0	11		015	16258374	Met	K9	AC	025	160	P	118	11/16
Packard 903, 904	NE	0	19		015	16258374	Met	K9	AC	025	160	P	118	11/16
Peerless Mast Cust 8	AL				020	16258374	Met	9S	Champ	020	129	P	120	
Pierce Arrow 54	DR	17	31		018	16258374	7/8	C4	Champ	025	140	P	112	7/8
Pierce Arrow 53	DR	30	12		018	C	Met	K10	AC	022	160	P	112	7/8
Pierce Arrow 52, 51	DR	30	12		018	C	Met	K10	AC	022	160	P	112	7/8
Plymouth	DR	0	18		020	1342	Met	G12	AC	020	84	P	115	11/16
Pontiac 6	DR	0	23		022	153624	Met	K12	AC	025	86	N	139	3/4
Pontiac 8	DR	0	25		016	14527638	Met	K12	AC	025	100	N	147	3/4
Reo 6-21	DR	25	18		020	153624	Met	C7	Champ	025	110	N	111	3/4
Reo 8-21 2	DR	22	18		018	16258374	Met	C7	Champ	025	110	N	110	11/16
Reo 31, 35	DR	25	22		022	16258374	Met	C7	Champ	025	128	N	111	3/4
Rockne Six 65	AL				020	153624	Met	C7	Champ	025	102	P	102	1/2
Rockne Six 75	AL	15	23		020	142635	7/8	2	Champ	025	102	P	105	1/2
Studebaker 6	DR	15	23		020	142635	7/8	2	Champ	025	102	P	105	1/2
Studebaker Dict 8	DR	25	27		020	16258374	7/8	2	Champ	025	102	P	105	1/2
Studebaker Com 8	DR	25	27		020	16258374	7/8	2	Champ	025	136	P	105	1/2
Studebaker Pres 8	DR	25	21		020	16258374	7/8	C4	Champ	025	136	P	112	7/8
Stutz LAA	DR	20	30		017	153624	Met	C7	Champ	025	146	N	118	11/16
Stutz SV16	DR	18	30		017	16258374	Met	C7	Champ	025	145	N	118	11/16
Stutz DV32	DR	18	33		020	16258374	Met	C7	Champ	025	145	N	118	11/16
Willys Overland 6-90	AL	10	10		018	153624	Met	C7	Champ	020	102	N	105	11/16
Willys Overland 8-88	AL	10	12		018	16258374	Met	C4	Champ	027	148	N	104	11/16
Willys Knight 95	AL	10	7		018	153624	7/8	C1	Champ	020	127	N	112	7/8
Willys Knight 66D	AL	10	11		018	153624	7/8	C4	Champ	020	170	N	112	13/16

A — 1R, 6L, 4R, 3L, 2R, 5L, 6R, 1L, 3R, 4L, 5R, 2L
AL — Auto Lite
C — 1L, 2R, 5L, 4R, 3L, 1R, 6L, 5R, 2L, 3R, 4L, 6R
Champ — Champion
D — 1L, 4R, 5L, 7R, 2L, 3R, 6L, 1R, 8L, 5R, 4L, 2R, 7L, 6R, 3L, 8R
DR — Delco Remy
E — 1R, 1L, 4R, 4L, 2L, 3R, 3L, 2R
G — 1R 6L, 5R, 2L, 3R, 4L, 6R, 1L, 2R, 5L, 4R, 3L
H — 1L, 3R, 6L, 7R, 2L, 4R, 5L, 1R, 8L, 6R, 3L, 2R, 7L, 5R, 4L, 8R
Met — Metric
N — Negative
NE — North East
P — Positive

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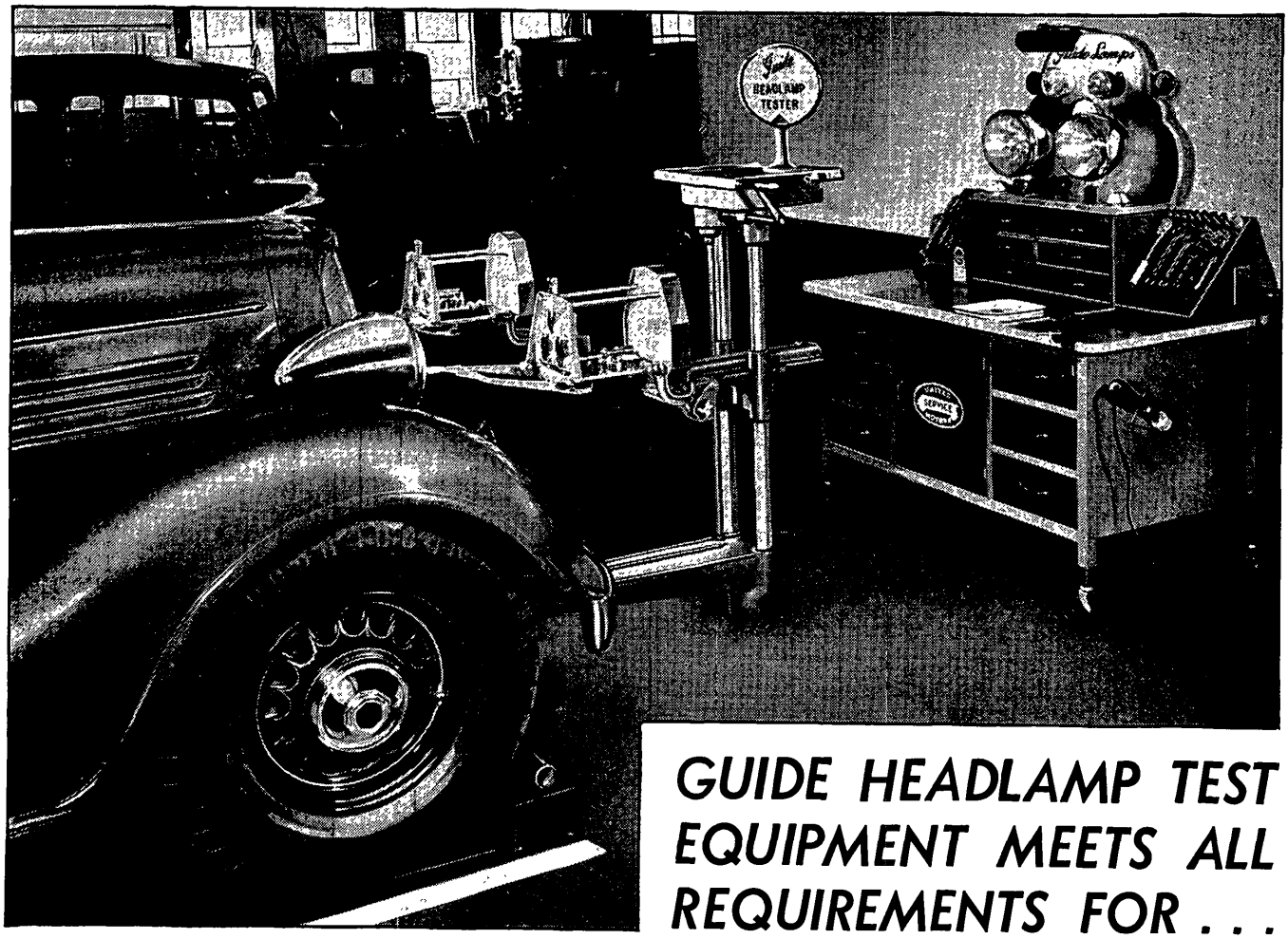

GUIDE HEADLAMP TEST EQUIPMENT MEETS ALL REQUIREMENTS FOR . . .

SCIENTIFIC AUTOMOTIVE LIGHTING SERVICE

National, state and local safety organizations and the motoring public at large have awakened to the necessity for better lighting of vehicles traveling streets and highways at night. In line with this safety trend, United Motors Service has developed the new Guide headlamp tester which will permit wide-awake service stations to provide scientific automotive lighting service—for the first time, in an economical and profitable manner. Statistics show that two out of every three cars have defective lights. The ever-increasing number of accidents due to poor illumination will make this service easy to sell with the Guide headlamp test equipment.

Write to the nearest United Motors Branch (listed below) for the booklet, "What's Ahead," which is not only a complete description of the new equipment but is also an authoritative treatise on modern automotive lighting.

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Cleveland	Milwaukee	Seattle
Dallas	Minneapolis	St. Louis
Denver	New Orleans	Toronto

MOTORS

Fuel, Cooling and Engine Oil

Float level diagrams indicated by number following float level are shown on page 66

1935

MAKE AND MODEL	Fuel System: Carburetor: Make and model	Size	Type	Float level	Cooling System: Capacity gallons	Radiator hose: Lower: Diameter	Lower: Length	Upper: Diameter	Upper: Length	Oil, grade recommended: Summer	Winter	Capacity of oil reservoir qts
Auburn 653	StmEX32	1¼	DSi	9/16 (6)	4	1½	11¾	1½	7½	40	20	6
Auburn 851	StmEE1	1	DDu	11/32 (6)	5	1½	11¾	1½	7½	40	20	8
Austin 4	TillM 10A	5/8	USi	7/8	1½	1¼	9¼	1¼	9¼	30	20	2½
Buick 40	StmEE1	1	DDu	11/32 (6)	3½	1 7/16	2¼	1 7/16	6	30	20W	6
Buick 50	MrvED1S	1¼	UDu	1 3/32 (4)	3⅞	1 7/16	5¼	1 7/16	7¼	30	20W	7
Buick 60	MrvED2S	1 5/16	UDu	1 3/32 (4)	4½	1 7/16	5½	1 7/16	5½	30	20W	8
Buick 90	MrvED3	1 7/16	UDu	1 3/32 (4)	5¾	1 7/16	5½	1 7/16	4⅞	30	20W	9
Cadillac V8	DetX8244	2	USi	7/16 (3)	5	1¾	8⅝	1¼	10¼	40	20	8
Cadillac V12	Det51	1½	UTw	13/16 (3)	4½	1¾	4	1¼	7⅝	40	20	9
Cadillac V16	Det51	1½	UTw	13/16 (3)	5¾	1¾	4	1¼	9½	40	20	10
Chevrolet Std 6	CarW1	1¼	DSi	3/8 (2)	2½	1¼	4¼	1¼	6½	30	10W	6½
Chevrolet Mast 6	CarW1	1¼	DSi	3/8 (2)	2⅝	1¼	7	1¼	9⅛	30	10W	6½
Chrysler 6AS	B&B	1½	DSi	1/4 (1)	3⅞					30	20W	6
Chrysler 8AS	StmEX32	1½	DSi	5/16 (6)	5½					30	20W	6
Chrysler 8AF	Stm	1½	DSi	5/8 (6)	4¾					30	20W	6
Chrysler Imp 8AF	StmEE22	1¼	DDu	5/8 (6)	4¾					30	20W	6
Chrysler IC8AF 137	StmEE22	1¼	DDu		4¾					30	20W	6
Chrysler IC8AF 146	Stm	1½	DDu							30	20W	8½
DeSoto 6AS	B&B	1½	DSi	1/4 (1)	3⅞					30	20W	6
DeSoto 6AF	B&B	1½	DSi	1/4 (1)						30	20W	6
Dodge 6	StmEX22	1¼	DSi	5/16 (6)	4¾					30	20W	5
Duesenberg 8	Stm	1½	DDu		8	1¾	5½	1¾	11⅜	60	50	12
Ford V8	StmEE1	1	DDu	11/32 (6)	5½	1¾	5½	1¾	11¼	40	20	5
Graham 6	Stm	1¼	DSi		3¾	1½	3	1½	7	40	30	5
Graham Spc 6	Stm	1¼	DSi		4⅜	1¾	3¼	1¾	6⅜	40	30	6
Graham 8	Stm	1	DDu		4½	2⅛	5⅜	1¾	6⅜	40	30	7
Graham Super C8	Stm	1½	DSi		5	2⅛	5⅜	1¾	6⅜	40	30	7
Hudson Big 6	CarW1	1¼	DSi	1/2 (2)	4¾	1 1/16	3¼	1 1/16	3¼	30	10W	5
Hudson 8	CarW1	1¼	DSi	1/2 (2)	5¾	1½	3¼	1 1/16	7⅝	30	10W	7
Hupmobile 518	StmEX32	1½	DSi	1/8 (6)	4	1½	6¾	1¼	9⅝	30	20	6
Hupmobile 521	StmEX32	1½	DSi	5/16 (6)	4½	1½	6¾	1¼	10¾	30	20	6
Hupmobile 527	StmEE22	1¼	DDu	1/8 (6)	6	1¾		1½	10¾	30	20	8
LaFayette 6	MrvD2	1¼	DSi	13/8 (5)	4¾	1½	4¼	1¼	7	30	20	7
LaSalle 8	StmEE23	1½	DDu	5/8 (6)	4½	1¾	3	1½	5⅞	40	20	7
Lincoln V12	StmEE22	1¼	DDu	11/32 (6)	8	1⅜		1⅜	12⅞	40	30	12
Nash Adv 6	StmEX32	1½	DSi	5/16 (6)	4⅝	1½	2⅞	1½	5	30	20	7
Nash Adv Amb 8	StmEE22	1¼	DDu	5/16 (6)	5¼	1½	2⅞	1½	5¾	30	20	8
Oldsmobile 6	StmEX22	1¼	DSi	1/2 (6)	3¼	1½	9 7/16	1½	10⅛	30	20W	6
Oldsmobile 8	StmEE1	1	DDu	11/32 (6)	3¾	1¾	10 11/16	1½	8¾	30	20W	7
Packard 120	StmEE14	1	DDu	11/32 (6)	4⅛	1⅛	3	1½	10	30	20W	7
Packard 8	StmEE23	1¼	DDu	5/8 (6)	5	1¾	6½	1¾	10	30	10W	8
Packard Super 8	StmEE23	1¼	DDu	5/8 (6)	5½	1¾	6½	1¾	6½	30	10W	10
Packard 12	StmEE3	1½	DDu	5/16 (6)	10	1½	13	2	11	30	10W	10
Pierce-Arrow 845	StmEE3	1 11/16	DDu	3/4 (6)	6½	2¼	5½	1½	13½	30	20W	9
Pierce-Arrow 1245	StmEX3	1 11/16	DTw	3/4 (6)	9½	2¼	3¼	1½	11½	30	20W	10
Pierce-Arrow 1255	StmEX3	1 11/16	DTw	3/4 (6)	9½	2¼	3¼	1½	11½	30	20W	10
Plymouth 6	B&B	1¼	DSi	1/4 (1)	3¾					30	20W	5
Pontiac 6	CarW1	1¼	DSi	5/8 (2)	3⅝	1½	9¾	1½	7¼	20	10W	6
Pontiac 8	CarW1	1¼	DSi	5/8 (2)	3⅞	1½	9¾	1½	7¼	20	10W	7
Reo 6A	CarBB	1½	DSi	1/4 (1)		1½	10⅝	1½	6	30	20W	9
Reo S	StmEX32	1½	DSi	3/4 (6)	4¾	1½	7	1½	5½	30	20	6
Studebaker Dict 6	StmEX23	1¼	DSi	5/16 (6)	4⅛	1¾	3	1¾	2½	30	20	5
Studebaker Com 8	StmEE1	1	DDu	3/4 (6)	5½	1¾	3	1¾	2½	30	20	8
Studebaker Pres 8	StmEE1	1	DDu	3/4 (6)	5½	1¾	3	1¾	2½	30	20	8
Stutz SV 16	Zen105DS	1¼	UDu		7	1¼	2¾	2	4½	40	30	12
Stutz DV 32	StmEE3	1½	DDu	5/16 (6)	7	1¼	2¾	2	4½	40	30	12
Terraplane 6	CarW1	1¼	DSi	1/2 (2)	4¾	1 1/16	3¼	1 1/16	9	30	20W	6
Willys 77	TillD1C	1⅛	DSi	1 1/16 (8)	2¼	1 7/16	5⅛	1½	11 3/4	30	20	4

1934

MAKE AND MODEL	Fuel System: Carburetor: Make and model	Size	Type	Float level	Cooling System: Capacity gallons	Radiator hose: Lower: Diameter	Lower: Length	Upper: Diameter	Upper: Length	Oil, grade recommended: Summer	Winter	Capacity of oil reservoir qts
Auburn Std 6-52	Car2885	1¼	DSi	3/8 (2)		1½		1½		40	20	6
Auburn Cust 6-52	Car2885	1¼	DSi	3/8 (2)		1½		1½		40	20	6
Auburn Std 8-50	StmEX32	1½	DSi	5/16 (6)	4¾	1½		1½		40	30	8
Auburn Cust 8-50	StmEE1	1	DDu	11/32 (6)	4¾	1½		1½		40	30	8
Auburn 12-165	StmEX2	1¼	DTw	5/16 (6)	9¼	1¾	4¼	2	3½	40	20	9
Austin	Till	5/8	USi	7/8	1½	1¼	9¼	1¼	9¼	30	20	2½
Buick 34 50	MrvED1S	1¼	UDu	1 3/32 (4)	3⅞	1 7/16	5¼	1 7/16	7¼	30	20	7
Buick 34-60	MrvED2S	1 5/16	UDu	1 3/32 (4)	4½	1 7/16	5½	1 7/16	5½	30	20	8
Buick 34 90	MrvED3	1 7/16	UDu	1 3/32 (4)	5¾	1 7/16	5½	1 7/16	4⅞	30	20	9
Cadillac V8	DetX8244	2	USi	7/16 (3)	5	1¾	8⅝	1¼	10¼	40	20	8
Cadillac V12	Det51	1½	UTw	13/16 (3)	4½	1¾	4	1¼	7⅝	40	20	9
Cadillac V16	Det51	1½	UTw	13/16 (3)	5¾	1¾	4	1¼	9½	40	20	10
Chevrolet Std 6 33	CarW1	1¼	DSi	3/8 (2)	2½	1¼	9 1/16	1¼	10¾	30	20	4½
Chevrolet Mast 6	CarW1	1¼	DSi	3/8 (2)	2⅝	1¼	7	1¼	9⅛	30	20	5
Chrysler 6	B&B	1½	DSi	1/4 (1)	3⅞					30	20	6
Chrysler 8	StmEE22	1½	DSi	5/8 (6)	5¾					30	20	6
Chrysler Imp 8	StmEE22	1¼	DDu	5/8 (6)	5¾					30	20	6
Chrysler Imp Cust 8	StmEE3	1½	DDu	7/16 (6)						30	20	8½
Continental 4	Mrv	7/8	USi	1 3/16 (4)	2½	1¼	5	1½	3⅜	30	20	4
Ford V8	StmEE1	1¼	DDu	11/32 (6)	5½	1¾	5½	1¾	11⅝	40	20	5
Franklin Olympic 6	StmURO2	1½	USi	3/8 (6)						40	30	6
Franklin Airman 6	StmURO2	1½	USi	9/32 (6)						40	30	6
Franklin V12	StmEE2	1¼	DDu	5/16 (6)						40	30	10
Graham 6	StmEX22	1¼	DSi	5/8 (6)	5					40	30	6
Graham 8	StmURO2	1½	USi	5/16 (6)	5					40	30	6
Graham Cust 8	StmEX32	1½	DSi	5/16 (6)	5					40	30	6
Hudson 8	CarW1	1¼	DSi	1/2 (2)		1½	3¼	1 1/16	7⅝	30	30	7
Hupmobile 417	StmEX32	1½	DSi	5/16 (6)	4	1½		1¼		30	20	6
Hupmobile 421 421A	CarW1	1¼	DSi	1/4 (1)	4	1¼	9⅜	1¼	8⅝	30	20	6
Hupmobile 421J	StmEX32	1¼	DSi	1/8 (6)	4	1½		1¼		30	20	6
Hupmobile 422	StmUUR2	1¼	UDu	11/64 (6)	5½	2	2¾	1½	6⅜	30	20	6
Hupmobile 426	StmUUR2	1¼	UDu	11/64 (6)	6	2	2¾	1½	6⅜	30	20	9
Hupmobile 427	StmEE22	1¼	DDu	5/16 (6)	6	1¾		1½		30	20	8
Lafayette Nas Blt	MrvB	1¼	DSi	1⅜ (5)	4¾					30	20	7
LaSalle 8	StmEE23	1¼	DDu	5/8 (6)	5¾	1¾	3	1½	5⅞	30	20	7
Lincoln V12-136 145	StmEE22	1½	DDu	11/32 (6)	8	1¾		1⅜		40	30	11
Nash Big 6	StmEX32	1½	DSi	5/16 (6)	4⅝					30	20	7
Nash Adv 8	StmEE22	1¼	DDu	5/16 (6)	5¼					30	20	8
Nash Amb 8	StmUUR2	1¼	UDu	3/4 (6)	5½					30	20	10
Oldsmobile 6	StmEX22	1¼	DSi	1/2 (6)	3¾	1½	2	1½	9⅜	30	20	6
Oldsmobile 8	StmEE1	1	DDu	11/32 (6)	4¾	1¾	2⅞	1½	5⅞	30	20	7
Packard 8	StmEE22	1¼	DDu	5/8 (6)	5	1¾	8¾	1¾	8¾	30	20	8
Packard Super 8	StmEE22	1¼	DDu	5/8 (6)	5	1¾	8¾	1¾	8¾	30	20	10
Packard 12	StmE3	1½	DDu	5/16 (6)	10	1½	13	1½	12	30	20	10
Pierce-Arrow 840A	StmEE3	1 11/16	DDu	5/16 (6)	6½	2¼	5½	1½	13½	30	20	9
Pierce-Arrow 1240A	StmE3	1 11/16	DTw	3/4 (6)	9½	2¼	3¼	1½	11½	30	20	10
Pierce-Arrow 1248A	StmE3	1 11/16	DTw	3/4 (6)	9½	2¼	3¼	1½	11½	30	20	10
Plymouth 6	B&B	1¼	DSi	1/4 (1)	4					30	20	5
Pontiac 8	CarW1	1¼	DSi	5/8 (2)	3¾					30	20	7
Reo S6	StmE2	1½	DSi	3/4 (6)	5	1½	7	1½	5¼	30	20	6
Reo Royale 8	StmEE23	1¼	DDu	5/8 (6)	5¾	1¾	8	1¾	7	30	20	8
Studebaker Dict 6	StmUR23	1¼	USi	5/16 (6)	4	1½	5½	1¼	8¼	30	20	5
Studebaker Com 8	StmE33	1½	DSi	3/4 (6)	4½	1¾	3	1½	8½	30	20	6½
Studebaker Pres 8	StmEE22	1¼	DDu	1¼ (6)	4½	1¾	3	1½	8½	30	20	6½
Stutz SV16	Zem105DS	1¼	UDu		7	1¼	2¾	1 5/16	3½	40	30	12
Stutz DV32	StmEE3	1½	DDu	5/16 (6)	7	1¼	2¾	1 5/16	5½	40	30	12
Terraplane 6	CarW1	1¼	DSi	3/8 (2)	3	1½	3¼	1 1/16	9	30	20	6

B&B — Ball & Ball
Car — Carter
Det — Detroit
DDu — Dual downdraft
DSi — Single downdraft
DTw — Two downdraft
Mrv — Marvel
Stm — Stromberg
Til — Tillotson
UDu — Dual updraft
USi — Single updraft
UTw — Two updraft
Zen — Zenith

Fuel, Cooling and Engine Oil

Float level diagrams indicated by number following float level are shown on page 66

1933

MAKE AND MODEL	Fuel System: Carbureter: Make and model	Size	Type	Float level	Cooling System: Capacity gallons	Radiator hose: Lower: Diameter	Lower: Length	Upper: Diameter	Upper: Length	Oil, grade recommended: Summer	Winter	Capacity of oil reservoir qts
Auburn 8-101	StmURO2	1¼	US	9/16 (6)	4¾	1½	11	1½	9	40	20	8
Auburn 8-105	StmEX3	1¼	DSi	9/16 (6)	4¾	1½	11	1½	9	40	20	8
Auburn 12-161	StmDXR2	1¼	DTw	9/16 (6)	9¼	1¾	4¼	2	3½	40	20	9
Auburn 12-165	StmEX2	1¼	DTw	9/16 (6)	9¼	1¾	4¼	2	3½	40	20	9
Austin	Till	⅝	USi	⅞	1½	1¼	9¼	1¼	9¼	30	20	2½
Buick 33-50	MrvED18	1¼	UDu	13/16 (4)	3	1 1/16	5¼	1 1/16	6½	30	20	7
Buick 33-60	MrvED2S	1 1/16	UDu	1 1/16 (4)	4	1 1/16	5½	1 1/16	6¼	30	20	8
Buick 33-80, 90	MrvED3	1 1/16	UDu	1 1/16 (4)	4¾	1 1/16	5½	1 1/16	5½	30	20	9
Cadillac V8	Own	2	USi	1/16 (2)	6½	1⅞	10⅜	1¼	13¼	40	20	8
Cadillac V12	Det51	1½	UTw	13/16 (3)	6	1¾	4	1¼	7¼	40	20	9
Cadillac V16	Det51	1½	UTw	13/16 (3)	7	1¾	4	1¼	7¼	40	20	10
Chevrolet	Car259S	1¼	DSi	5/16 (2)	2½	1¼	7	1¼	9½	30	20	5
Chrysler 6	StmEX32	1½	DSi	9/16 (6)	3⅞					30	20	6
Chrysler Royal 8	StmEX32	1½	DSi	9/16 (6)	4⅞					30	20	6
Chrysler Imp 8	StmEX32	1½	DSi	9/16 (6)	5					30	20	6
Chrysler Imp Cust 8	StmEE3	1½	DDu	9/16 (6)	6⅝					30	20	8½
Continental 4	MrvAC	⅞	USi		2½	1¼	6	1½	8⅜	30	20	4
Continental Light 6	MrvB	1¼	DSi		2½	1¼	6	1½	8⅜	30	20	5
Continental Big 6	MrvB	1¼	DSi		4	1½	2¾	1½	8¼	40	20	6
Cord	ShbSX411	1¼	UDu	11/16 (9)	5½	1½	4	1½	4	40	20	8
Cunningham	StmUUR2	1¼	DDu	17/32 (6)	7¼	1¾	3¼	1¼	5½	30	30	8
DeSoto 6	B&BE6A	1½	DSi	1/16 (1)	4					30	20	6
Dodge 6	StmEX22	1¼	DSi	9/16 (6)	3⅝					30	20	5
Dodge 8	B&BE8A	1½	DDu	1/16 (1)	4½					30	20	6
Duesenberg	Shb	1½	UDu		8	1¾	5½	1¾	11⅜	40	30	12
Essex Terraplane 6	Car267S	1¼	DSi	3/8 (2)	3	1 1/16	3¼	1⅜	8	30	30	6
Essex Terraplane 8	Car261S	1¼	DSi	½ (2)	4	1 1/16	3¼	1⅜	8	30	30	7
Ford B	Zen	1⅛	USi	5/8 (6)	3	1¾	2¾	2	11¼	40	20	5
Ford V8	Det	1¼	DSi	1⅛ (6)	5½	1¾	5½	1¾	11⅝	40	20	5
Franklin Olym	StmU3	1½	USi	3/4 (6)						40	30	6
Franklin 8	StmU3	1½	USi	3/4 (6)						40	30	6
Franklin 12	StmEE2	1¼	DDu	9/16 (6)						40	30	10
Graham Std 6	Det	1¼	DSi	13/16 (3)	5	2	4	1¾	7	40	30	6
Graham Std Cust 8	Det	1¼	DSi	13/16 (3)	5	2	4	1¾	7	40	30	6
Hudson Super 6	MrvVE3	1¼	USi	1 1/16 (4)	3	1 1/16	3¼	1⅜	8	30	30	6
Hudson 8	MrvVH4	1½	USi	1 1/16 (4)	4½	1½	5½	1 1/16	9⅜	30	30	8
Hupmobile 321	Car258S	1¼	DSi	½ (2)	4	1¼	9⅜	1¼	8⅝	30	20	6
Hupmobile 322	StmUUR2	1¼	UDu	21/32 (6)	5	2	2¾	1½	6⅜	30	20	6
Hupmobile 326	StmUUR2	1¼	UDu	21/32 (6)	6	2	2¾	1½	6⅜	30	20	9
LaSalle	Own	2	USi	1/16 (2)	6½	1⅞	10⅜	1¼	13¼	40	20	8
Lincoln V12-136	StmEE	1½	UDu	9/16 (6)	8	1¾		1⅜		40	30	10
Lincoln V12-145	StmDD3	1½	UDu	9/16 (6)	8½	1¾	3¼	1⅜	12⅞	40	30	12
Marmon 16	StmDDR3	1½	DDu		8¼	2	3¼	1½	8	40	30	10
Nash Big 6	StmEX22	1 1/16	DSi	9/16 (6)	4¾	1½	7 1/16	1¼	11 1/16	30	20	7
Nash Std 8	StmEX22	1 1/16	DSi	9/16 (6)	4	1½		1¼		30	20	7
Nash Spc 8	StmEE2	1 1/16	DDu	9/16 (6)	4	1½	7 1/16	1¼	10	30	20	7
Nash Adv 8	StmUUR2	1¼	UDu	7/16 (6)	5¼	1¾	9½	1½	6	30	20	8
Nash Amb 8	StmUUR2	1¼	UDu	21/32 (6)	5½	1¾	5½	1½	6	30	20	10
Oldsmobile 6	StmEC22	1¼	DSi	9/16 (6)	4¼	1¾	2⅝	1½	5 7/8	30	20	6
Oldsmobile 8	StmEE22	1¼	DDu	9/16 (6)	4¼	1¾	2⅝	1½	5 7/8	30	20	7
Packard 8	StmEE22	1¼	DDu	5/8 (6)	5	1¾	6½	1¾	8¾	30	20	8
Packard Super 8	StmEE22	1¼	DDu	5/8 (6)	5	1¾	6½	1¾	8¾	30	20	10
Packard 12	StmEE3	1½	DDu	9/16 (6)	10	2	3	1½	12	30	20	10
Pierce-Arrow 836	StmEE3	1 13/16	DDu	9/16 (6)	6½	2¼	5½	1½	13½	30	20	9
Pierce-Arrow 1236	StmEX32	1 13/16	DTw	¾ (6)	9½	2¼	3¼	1½	11½	30	20	10
Pierce-Arrow 1242, 47	StmEX32	1 13/16	DTw	¾ (6)	9½	2¼	3¼	1½	11½	30	20	1
Plymouth 6	B&BC6A	1¼	DSi	1/16 (1)	3¼					30	20	5
Pontiac 8	Car255S	1¼	DSi	½ (2)	3¾					30	20	7
Reo S	StmEX32	1½	DSi	9/16 (6)	5	1½	7	1½	5¼	30	20	6
Reo Royale	Shb8	1¼	DDu		5¾	1¾	8	1¾	7	30	20	8
Rockne Six	StmUR2	1¼	USi	1 1/16 (6)	3	1½	2¾	1¼	3	30	20	5
Studebaker 6	StmEX22	1¼	DSi	9/16 (6)	3½	1¾	2½	1¼	6½	30	10	7
Studebaker Com 8	StmEE22	1¼	DDu	9/16 (6)	4	1¾	3	1½	8½	30	20	6½
Studebaker Pres 8	StmEE22	1¼	DDu	9/16 (6)	4½	1¾	2½	1½	10	30	10	6½
Studebaker Spd Pres 8	StmEE22	1¼	DDu	9/16 (6)	5¾	1¾	2½	1½	11⅛	30	10	8
Stutz LAA	Zen105DS	1¼	UDu		6	1¼	2¾	1 1/16	3½	40	30	9
Stutz SV16	Zen105DS	1¼	UDu		7	1¼	2¾	1 1/16	3½	50	40	12
Stutz DV32	StmEE3	1½	DDu		7	1¼	2¾	1 1/16	5½	50	40	12
Willys 77	TillD1A	1⅜	DSi	1 1/16 (8)	2¼					30	20	4
Willys 99	TillD2A	1⅜	DSi		4½					30	20	7

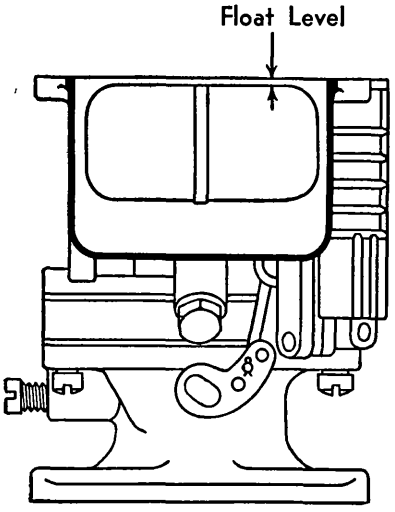
1932

MAKE AND MODEL	Fuel System: Carbureter: Make and model	Size	Type	Float level	Cooling System: Capacity gallons	Radiator hose: Lower: Diameter	Lower: Length	Upper: Diameter	Upper: Length	Oil, grade recommended: Summer	Winter	Capacity of oil reservoir qts.
Auburn 8-100	StmURO2	1¼	USi	9/16 (6)	4¾	1½	11	1½	9	40	20	8
Auburn 12-160	StmEX2	1¼	DTw	9/16 (6)		1¾	4¼	2	3½	40	20	9
Austin	TillM10B	⅝	USi	⅞	1½	1¼	9¼	1¼	9¼	40	20	2½
Buick 32-50	MrvTD1S	1¼	UDu	11/32 (4)	3	1 1/16	4¾	1 1/16	3⅞	30	20	7
Buick 32-60	MrvTD2S	1⅛	UDu	13/32 (4)	4	1 1/16	5½	1 1/16	6¼	30	20	8
Buick 32-80, 90	MrvTD3	1 1/16	UDu	13/32 (4)	4¾	1 1/16	5½	1 1/16	6¼	30	20	9
Cadillac V8	Own	2	UDu	1/16 (7)	6½	1⅞	10⅜	1¼	13¼	40	20	8
Cadillac V12	Det51	1½	UTw	13/16 (3)	6	1¾	4	1¼	7¼	40	20	9
Cadillac V16	Det51	1½	UTw	13/16 (3)	7	1¾	4	1¼	7¼	40	20	10
Chevrolet	Car	1	DSi	5/16 (2)	3	1¼	4¼	1¼	9⅜	20	20	5
Chrysler 6	B&B	1¼	USi	1/4 (1)						30	20	6
Chrysler 8	StmDXR3	1½	DSi	23/32 (6)						30	20	6
Chrysler Imp Ip Cst 8	StmDD3	1½	DDu	11/32 (6)						30	20	8½
Cord 8	ShbSX411	1¼	Du	11/32 (9)	5½	1½	4	1½	4	40	20	8
Cunningham	StmUUR2	1¼	DDu	17/32 (6)	7¼	1¾	3¼	1¼	5½	30	30	8
DeSoto 6	B&B	1¼	USi	3/32 (1)	3⅝					30	20	6
DeVaux 6-75	TillJ2A	1¼	USi		3¾	1½	2¾	1½	8¼	40	20	6
Dodge 6	CarRTO8	1¼	USi	5/16 (2)	3⅝					30	20	6
Dodge 8	StmDXD2	1½	DDu	23/32 (6)	4½					30	20	6
Duesenberg	Shb	1½	UDu		8	1¾	5½	1¾	11⅜	40	30	12
Durant 6-19	TillJ5B	1¼	USi	1 13/16 (8)	3½	1½	2¾	1½	8¾	40	20	6
Essex	Mrv	1¼	USi	11/32 (4)	4¾	2¼	11⅜	2¼	7½	30		6
Ford A	Zen124X1	1	USi	1/16 (6)	3	1¾	2¾	2	8	40	20	5
Franklin	StmU3	1½	USi	3/4 (6)						40	30	6
Graham 6	ShbT	1¼	DSi		4½	2	4	1¾	5	40	30	6
Graham 8	Det51	1½	USi	5/8 (3)		2	4	1¾	7	40	30	6
Hudson 8	Mrv	1¾	USi	3/4 (4)	4¼	1½	5	1 1/16	9⅜	30		8
Hupmobile 214	StmU2	1¼	USi	11/32 (6)	3½	1¼	7	1¼	10½	30	20	6
Hupmobile 216	StmDXR2	1¼	DSi	23/32 (6)	3¼	1¼		1¼		30	20	6
Hupmobile 218	StmUU2	1¼	UDu	11/32 (6)	4	1½	2½	1½	5¼	30	20	6
Hupmobile 221	StmUU2	1¼	UDu	23/32 (6)	5	1½	3	1½	6⅜	30	20	9
Hupmobile 222	StmUUR2	1¼	UDu	21/32 (6)	5¼	2	2¾	1½		30	20	6
Hupmobile 225, 237	StmDD3	1½	DDu	21/32 (6)	7	1½	3	1½	6⅜	30	20	12
Hupmobile 226	StmUUR2	1¼	UDu	21/32 (6)	6	2	2¾	1½		30	20	9
LaSalle	Own	2	UDu	1/16 (7)	6½	1⅞	10⅜	1¼	13¼	40	20	8
Lincoln 12	StmDD	1½	DDu	23/32 (6)	8½	1¾	3¼	1⅜	12⅞	40	30	12
Marmon 8-125	StmUU	1¼	UDu		7	1¾	3¼	1¾	4½	40	30	10
Marmon 16	StmDDR3	1½	DDu		8½	2	3¼	1½	8	40	30	10
Nash 960	CarRTO8	1 1/16	USi	5/8 (2)	3	1¼	4 13/16	1¼	10	30	20	5
Nash 970	StmDD	1 1/16	DSi	13/16 (6)	3¾	1½	5¾	1¼	10	30	20	6
Nash 980	StmUUR2	1¼	UDu	21/32 (6)	5	1¾	2¼	1½	5⅜	30	20	8
Nash 990	StmUUR2	1¼	UDu	21/32 (6)	5½	1¾	3¼	1½	4½	30	20	10
Oldsmobile 6	StmEC2	1¼	DSi	5/8 (6)	4	1¾	3	1½	11¾	30	20	6
Oldsmobile 8	StmEE2	1¼	DDu	9/16 (6)	4	1¾	3	1½	11¾	30	20	7
Packard 901, 902	Det51	1½	USi	7/8 (10)	5	1½	8¾	1½	6½	30	20	8
Packard 903, 904	Det51	1¾	USi	7/8 (10)	6½	1½	8¾	1½	6½	30	20	10
Peerless Mast Cust 8	Shb	1¼	UDu		6	1 1/16	3	1 13/16	7⅜	30	20	10
Pierce-Arrow 54	StmUUR2	1¼	UDu		6¼	2¼	5	1½	13½	30	20	9
Pierce-Arrow 53	StmE2	1¼	Tw		9½	2¼	2¼	1½	26	30	20	10
Pierce-Arrow 52, 51	StmE2	1¼	Tw		9½	2¼	2¼	1½	26	30	20	10
Plymouth	CarRTO8	1⅛	USi	3/32 (2)	3⅝	2⅛	8¼	2⅛	3½	30	20	6
Pontiac 6	Mrv	1¼	USi	11/32 (4)	3½	1½		1¼	5	30	20	6
Pontiac 8	Mrv	1¾	DSi	11/32 (4)	6¼	1½	5¾	1½	6¼	30	20	7
Reo 621	ShbU	1½	USi	2 (9)	4¼	1½	10¼	1½	10¾	30	20	6
Reo 821, 25	ShbT	1½	USi	1¾ (9)	4	1½	10¼	1½	10¾	40	30	8
Reo 31, 35	ShbS	1¼	UDu	13/32 (9)	5¾					30	20	8
Rockne Six 65	StmUR2	1¼	USi	3/8 (6)	3	1½	5½	1¼	3	30	10	6
Rockne Six 75	StmUR2	1¼	USi	3/8 (6)	3½	1¾	2½	1¼	7⅞	30	10	7
Studebaker 6	StmUR2	1¼	USi	3/8 (6)	3	1¾	2½	1¼	7⅞	30	10	7
Studebaker Dict 8	StmUUR2	1¼	UDu	3/8 (6)	3½	1¾	2½	1½	9½	30	20	6½
Studebaker Com 8	StmUUR2	1¼	UDu	3/8 (6)	4	1¾	2½	1½	10½	30	10	6½
Studebaker Pres 8	StmUUR2	1¼	UDu	3/8 (6)	5¼	1¾	3	1½	12	30	10	8
Stutz LSS	Zen105DC	1¼	UDu		6	1¼	2¾	2	4½	40	30	9
Stutz SV16	Zen105DC	1¼	UDu		7	1¼	2¾	2	4½	40	30	12
Stutz DV32	ShbS	1½	UDu		7	1¼	2¾	2	4½	40	30	12
Willys Overland 6-90	TillJ1B	1⅛	USi	1 3/8 (12)	3⅜					30	20	7
Willys Overland 8-88	TillW5D	1¼	USi	¾ (12)	4⅞					30	20	8
Willys-Knight 95	TillJ3B	1⅛	USi	1 3/8 (12)	3⅞					30	20	8
Willys-Knight 66D	TillV5B	1¼	USi	1 3/8 (12)	4⅜					30	20	8

Car — Carter
DDu — Downdraft, Dual
DSi — Downdraft, Single
DTw — Two downdraft
Det — Detroit
Mrv — Marvel
Shb — Schebler
Stm — Stromberg
Til — Tillotson
UDu — Updraft, Dual
US — Updraft, Single
UTW — Updraft, two
Zen — Zenith

CARBURETOR FLOAT LEVELS

(See pages 64 and 65 for carburetor specifications)



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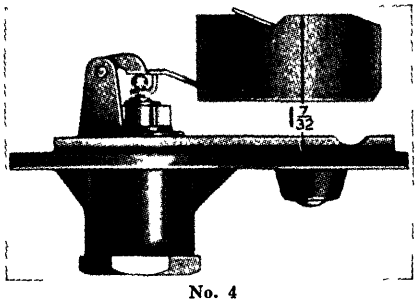

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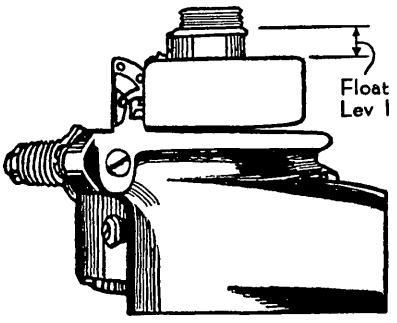

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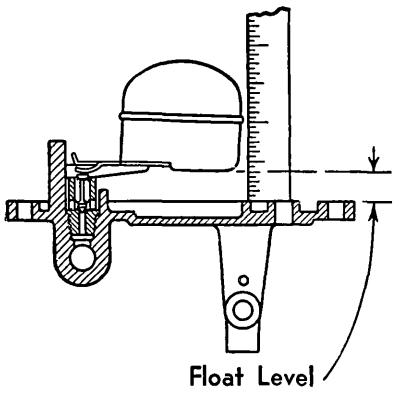

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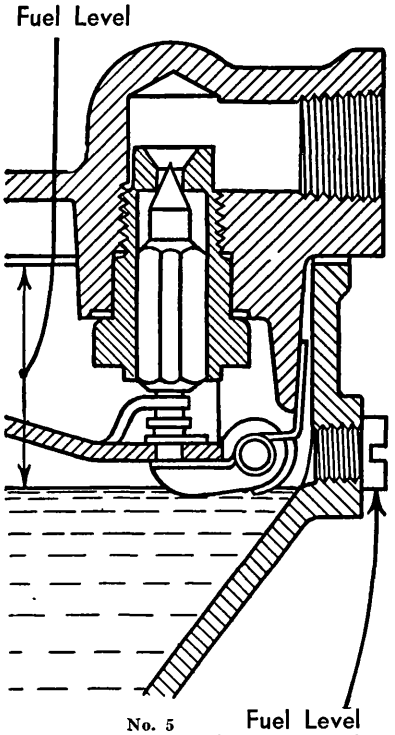

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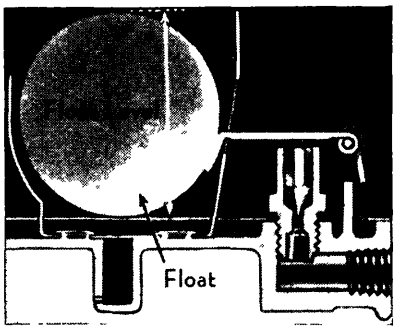

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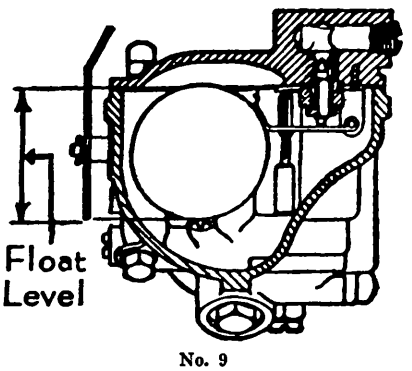

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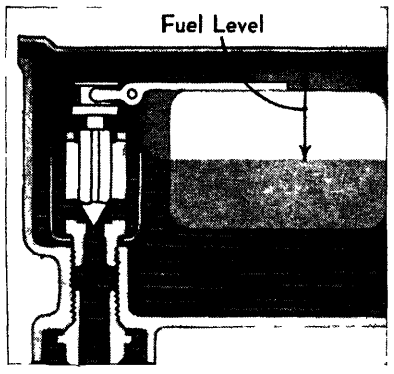

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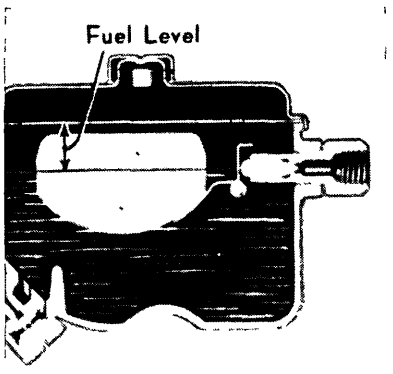

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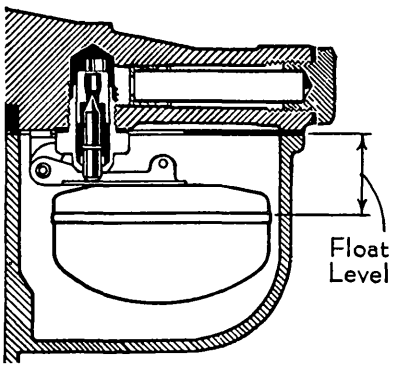

No. 11

1. Remove gasket. Measure from the top of the casting to the top of the float, not rib.
2. Remove bowl cover and invert. Measure from the top of the cover to the bottom of the float.
3. Measure from the top of the fuel to the bottom of the bowl cover.
4. Remove bowl cover and invert. Measure from machined surface of cover to top of float with the needle valve seated.
5. Measure from machined top of bowl to fuel level. There is an inspection plug at the side of the bowl for checking without removing the cover.
6. Measure from top of bowl to fuel lever. A gauge can be used on some carburetors to measure this level without removing the cover.
7. Measure from the bottom of the float to the machined surface at the lower side of the body against which the bowl fits.
8. Remove bowl cover. Measure from the machined surface of the bowl cover to the bottom of the float.
9. Measure from the carburetor body to the float.
10. Same as shown for No. 3 but measure from the top of the float bowl to the top of the float.
11. Measure from the top of the bowl to the rib at the center of the float.

Front Axle

1935

MAKE AND MODEL	Caster angle	Camber angle	Toe-in inches	Kingpin inclination
Auburn 653	3½	1½	1/8	7½
Auburn 851	2	1½	1/8	7½
Austin 4	5	1¼	1/8	1½
Buick 40	2¾	¼	1/8	...
Buick 50	1¾	¼	5/32	5
Buick 60	1	¼	5/32	5
Buick 90	1	¼	5/32	5
Cadillac V8	1½	1	1/8	4
Cadillac V12	1½	1	1/8	4
Cadillac V16	1½	1	1/8	4
Chevrolet Std. 6	1¾	1	7/64	7—
Chevrolet Mast. 6	*	1	7/64	7¾
Chrysler 6AS	1	¼	1/16	9
Chrysler 8AS	1	¼	1/16	4½
Chrysler 8AF	2	½	1/16	4
Chrysler Imp. 8AF	2	½	1/16	4
Chrysler IC8AF-137	2	½	1/16	4
Chrysler IC8AF-146	2	¼	1/16	4
DeSoto 6AS	1	¼	1/16	..
DeSoto 6AF	2	½	1/16	.
Dodge 6	2	½	1/16	8½
Duesenberg 8	3	1	¼	.
Ford V8	7	2	1/16	7
Graham 6	2½	1	1/8	7½
Graham Spc. 6	2	1	1/8	7
Graham 8	2	1	1/8	7
Graham Super C8	2	1	1/8	7
Hudson Big 6	3¼	½	1/8	7
Hudson 8	4	1	1/8	7
Hupmobile 518	1½	1¼	1/16	8½
Hupmobile 521	1½	1¼	1/16	8½
Hupmobile 527	1½	1¼	1/16	8½
LaFayette 6	....	1½	1/8	7
LaSalle 8	1	1	1/8	5
Lincoln V12	2	1	1/8	7½
Nash Big 6	2½	....	...	...
Nash Adv. 8	2½	....	....	.
Oldsmobile 6	1½	1/8	1/8	5
Oldsmobile 8	1½	¼	1/8	5
Packard 120	2	1	1/8	1½
Packard 8	1½	1	1/16	9
Packard Super 8	1½	1	1/16	9
Packard 12	1½	1	1/16	9
Pierce Arrow 845	¾	1	¼	8
Pierce Arrow 1245	¾	1	¼	8
Pierce Arrow 1255	¾	1	¼	8
Plymouth 6	2	½	1/16	.
Pontiac Std. 6	19¾	0	3/32	7
Pontiac DL6	19¾	0	3/32	7
Pontiac 8	20	0	3/32	7
Reo 6A	1½	1½	1/16	8
Reo S	4	1½	1/8	8
Studebaker Dict. 6	½	1½	1/16	9½
Studebaker Com. 8	½	1½	1/16	9½
Studebaker Pres. 8	½	1	1/16	9½
Stutz SV16	2	1	1/8	7
Stutz DV32	2	1	1/8	7
Terraplane 6	3¼	1	1/8	7
Willys 77	1	2	3/32	7½

1934

MAKE AND MODEL	Caster angle	Camber angle	Toe-in inches	Kingpin inclination
Auburn Std. 6-52	3½	.	1/8	7
Auburn Cust. 6-52	3½	. .	1/8	7
Auburn Std. 8-50	3½	...	1/8	7
Auburn Cust. 8-50	3½	...	1/8	7
Auburn 12-165	1½	2	1/8	7
Austin	5	1¼	1/8	1½
Buick 34-50	1¾	½	5/32	5½
Buick 34-60	1	½	5/32	5½
Buick 34-90	1	1	5/32	5½
Cadillac V8	1½	1	1/8	4
Cadillac V12	1½	1	1/8	4
Cadillac V16	1½	1	1/8	4
Chevrolet Std. 6, ,33	2¼	1½	7/64	7—
Chevrolet Mast. 6	1/8	1	7/64	7¾
Chrysler 6	1½	½	1/16	8¾
Chrysler 8	2	½	1/16	9
Chrysler Imp. 8	2	½	1/16	9
Chrysler Imp. Cust. 8	2	½	1/16	9
Continental 4	4	2	1/8	7
DeSoto 6	2	½	1/16	9
Dodge 6	1½	½	1/16	8¾
Duesenberg	3	1	¼	.
Ford V8	8¾	2	3/32	7
Franklin Olym. 6	3½	1½	1/8	3
Franklin Airman 6	1	2	1/8	7
Franklin V12	1	2	1/8	7
Graham 6	1½	1½	1/8	7
Graham 8	1½	1½	1/8	7
Graham Cust. 8	1½	1½	1/8	7
Hudson 8	1½	2	1/8	7
Hupmobile 417	1½	1¼	1/16	8½
Hupmobile 421, 412A	1½	1¼	1/16	8½
Hupmobile 421J	1½	1¼	1/16	3½
Hupmobile 422	1½	1¼	1/16	8½
Hupmobile 426	1½	1¼	1/16	8½
Hupmobile 427	....	....	..	....
Lafayette Nash Blt	2½	1½	1/8	7
LaSalle 8	1	1	1/8	5
Lincoln V12-136, 145	2	1	1/8	7½
Nash Big 6	2½	1½	1/8	7
Nash Adv. 8	1½	1½	1/8	7
Nash Amb. 8	0	1½	1/8	6
Oldsmobile 6	3	1	1/16	6
Oldsmobile 8	2	1	1/16	6
Packard 8	1½	1½	1/16	8½
Packard Super 8	1½	1½	1/16	8½
Packard 12	1½	1½	1/16	8½
Pierce Arrow 840A	¾	1	¼	8
Pierce Arrow 1240A	¾	1	¼	8
Pierce Arrow 1248A	¾	1	¼	8
Plymouth 6	1½	½	1/16	8¼
Pontiac 8	0	2	3/32	7
Reo S6	3½	1½	1/8	8
Reo Royale 8	3½	1½	1/8	8
Studebaker Dict. 6	½	1½	1/16	9½
Studebaker Com. 8	½	1	1/16	8
Studebaker Pres. 8	½	1	1/16	8
Stutz SV16	2½	3/8	¼	7½
Stutz DV32	2½	3/8	¼	7½
Terraplane 6	1½	2	1/8	7

1933

MAKE AND MODEL	Caster angle	Camber angle	Toe-in inches	Kingpin inclination
Auburn 8-101	1	2	1/8	7
Auburn 8-165	1	2	1/8	7
Auburn 12-161	1½	2	1/8	7
Auburn 12-165	1½	2	1/8	7
Austin	5	2¾	1/8	0
Buick 33-50	1½	1½	1/16	9½
Buick 33-60	1½	1½	1/16	8
Buick 33-80	1½	1½	1/16	8
Buick 33-90	1½	1½	1/16	8
Cadillac V8	2½	1½	1/8	7¾
Cadillac V12	2½	1½	1/16	7¾
Cadillac V16	2½	1½	1/16	7¾
Chevrolet	2¼	1½	3/32	7
Chrysler 6	...	½	1/16	7
Chrysler Royal 8	1	¼	1/16	7
Chrysler Imp. 8	1	¼	1/16	7
Chrysler IC8	1	¼	1/16	7
Continental 4	4	2	3/32	7
Continental Light 6	4	2	3/32	7
Continental Big 6	1½	1¼	1/16	7
Cord	0	1½	0	0
Cunningham	6	0	13/16	6
DeSoto 6	1	1	1/16	7
Dodge 6	2	½	1/16	9
Dodge 8	1	1	1/16	7
Duesenberg	3	1	¼	4½
Essex Terraplane 6	3	2	1/8	7
Essex Terraplane 8	3	2	1/8	7
Ford B	8¾	2	3/32	7
Ford V8	8¾	2	3/32	7
Franklin Olym	3½	1½	1/8	8
Franklin 6	1	2	1/8	7
Franklin 12	1	2	1/8	7
Graham Std. 6	1½	1½	1/8	7
Graham Std. Cust. 8	1½	1½	1/8	7
Hudson Super 6	1	1	1/8	7
Hudson 8	1	1	1/8	7
Hupmobile 321	1½	1¼	1/16	8½
Hupmobile 322	1½	1¼	1/16	8½
Hupmobile 326	1½	1¼	1/16	8½
LaSalle	2½	1½	1/8	7¾
Lincoln V8	2	1	1/8	7½
Lincoln V12	2	1	1/8	7½
Marmon 16	4	1½	1/16	7
Nash Big 6	2½	1½	1/8	7
Nash Std. 8	2½	1½	1/8	7
Nash S c. 8	2	1½	1/8	7
Nash Adv. 8	1½	1½	1/8	7
Nash Amb. 8	0	1½	1/8	6
Oldsmobile 6	2¾	1¾	1/8	9½
Oldsmobile 8	2¾	1¾	1/8	9½
Packard 8	3¼	1½	1/16	8½
Packard Super 8	3¼	1½	1/16	8½
Packard 12	1½	1½	1/16	8½
Pierce Arrow 836	1¾	1	1/8	8
Pierce Arrow 1236	1¾	1	1/8	8
Pierce Arrow 1242, 47	1¾	1	1/8	8
Plymouth 6	2	½	1/16	9
Pontiac 8	1½	1½	1/8	9½
Reo S	3½	1½	1/8	8
Reo Royale	3½	1½	1/8	8
Rockne Six	¼	1½	1/16	9½
Studebaker 6	½	1	1/16	8
Studebaker Com. 8	½	1	1/16	8
Studebaker Pres. 8	½	1	1/16	8
Studebaker Spd. Prs. 8	¼	1	1/16	8
Stutz LAA	2	3/8	¼	6
Stutz SV16, DV32	2½	3/8	¼	7½
Willys 77	1	2	3/32	7½
Willys 99	1	2	3/32	7½

1932

MAKE AND MODEL	Caster angle	Camber angle	Toe-in inches	Kingpin inclination
Auburn 8-100	1	2	1/8	7
Auburn 12-160	1½	2	1/16	7
Austin	5	2¾	1/8	0
Buick 32-50	1½	33/32	1/8	9½
Buick 32-60	1½	13/32	1/8	8
Buick 32-80	1½	13/32	1/8	8
Buick 32-90	1½	13/32	1/8	8
Cadillac V8	2½	1½	1/8	7¾
Cadillac V12	2½	1½	1/16	7¾
Cadillac V16	2	1½	1/16	7¾
Chevrolet	2¼	1½	3/32	7
Chrysler 6	1¼	1	1/16	7
Chrysler 8	1¼	1	3/32	7
Chrysler Imp. Cst. 8	1¼	1	1/8	7
Cord 8	0	1½	0	....
Cunningham	6	0	13/16	6
DeSoto 6	1¼	1	1/16	7
DeVaux 6-75	1½	1¼	1/16	....
Dodge 6	1¼	1	1/16	7
Dodge 8	1¼	1	1/16	7
Duesenberg	3	1	¼	....
Durant 6-19	1½	1¼	1/16	....
Essex	1	1	1/8	7
Ford A	5	2	1/16	....
Franklin	1	2	1/8	7
Graham 6	1½	2½	1/8	9
Graham 8	1½	1½	1/8	7
Hudson 8	1	1	1/8	7
Hupmobile 214	3	1½	1/16	7
Hupmobile 216	3	1½	1/16	7
Hupmobile 218	3	1½	1/16	7
Hupmobile 221	3	1½	1/16	7¼
Hupmobile 222	2½	2	1/16	7
Hupmobile 225, 237	3	1½	1/16	7¼
Hupmobile 226	2½	2	1/16	7—
LaSalle	2½	½	1/8	7¾
Lincoln 12	2	1	1/8	7½
Marmon 8-125	4	1½	1/16	7
Marmon 16	4	1½	1/16	7
Nash 960	2	1½	1/8	7
Nash 970	2	1½	1/8	7
Nash 980	1½	1½	1/8	7
Nash 990	0	1½	1/8	6
Oldsmobile 6	3	1¾	1/8	9½
Oldsmobile 8	3	1¾	1/8	9½
Packard 901	1	1½	1/8	8½
Packard 902	1	1½	1/8	8½
Packard 903	1	1½	1/8	8½
Packard 904	1	1½	1/8	8½
Peerless Mst. Cust. 8	1½	1½	1/8	7
Pierce Arrow 54	1¾	1	3/32	8
Pierce Arrow 53	1½	1	1/16	8
Pierce Arrow 52, 51	1½	1	1/16	8
Plymouth	1	1½	3/32	7
Pontiac 6	1½	1½	3/32	....
Pontiac 8	1¾	1½	3/32	....
Reo 6-21	3½	1½	1/8	8
Reo 8-21, 25	3½	1½	1/8	8
Reo 31, 35	3½	1½	1/8	8
Rockne Six 65	2	1½	1/8	7
Rockne Six 75	1	1	1/16	8
Studebaker 6	1¾	1	1/16	8
Studebaker Dict. 8	1¾	1	1/16	8
Studebaker Com. 8	1	1	1/16	8
Studebaker Pres. 8	1	1	1/16	8
Stutz LAA	2	1	1/8	6
Stutz SV16, DV32	2	1	1/8	7½
Willys Overland 6-90	1	2	3/32	7½
Willys Overland 8-88	1	2	3/32	7½
Willys Knight 95	1	1	....	7½
Willys Knight 66D	1	2	3 32	7½

Clutch and Transmission

1935

MAKE AND MODEL	Clutch						Transmission		
	Make	Type	Facing				Make	Type	Oil capacity, lbs.
			Diam.		Thickness	No. required			
			Inside	Outside					
Auburn 653	Long	Mould	5¾	137	2		Warner	EI	3
Auburn 851	Long	Mould	5½	9¾	137	2	DG&M	EI	3
Austin 4	Own	Mould	6½	8 1/16	⅛	2	Warner	U	5
Buick 40	B&B	Mould	6⅛	9⅜	133	2	Own	HI	1¾
Buick 50	Own	Wove	6¼	9½	130	2	Own	HI	1¾
Buick 60	Own	Wove	6¼	9⅞	130	2	Own	HI	4
Buick 90	Own	Wove	6½	9	135	4	Own	HI	4
Cadillac V8	Own	Wove	6½	9½	120	4	Own	CI	4½
Cadillac V12	Own	Wove	5⅞	10	120	4	Own	CI	4½
Cadillac V16	Own	Wove	6½	11	135	4	Own	CI	4½
Chevrolet Std. 6	Own	Mould	6¼	9	⅛	2	Own	E	1½
Chevrolet Mast. 6	Own	Mould	6¼	9	⅛	2	Own	EI	2½
Chrysler 6AS	B&B	Mould	6⅛	9⅞	133	2	Own	HI	2½
Chrysler 8AS	B&B	Mould	6⅛	9⅞	133	2	Own	HI	2½
Chrysler 8AF	B&B	Mould	6⅛	11	133	2	Own	HI	3⅜
Chrysler Imp. 8AF	B&B	Mould	6⅛	11	133	2	Own	HI	7¼
Chrysler IC8AF-137	B&B	Mould	6⅛	11	133	2	Own	HI	7¼
Chrysler IC8AF-146	B&B	Mould	6⅛	11	133	2	Own	HI	....
DeSoto 6AS	B&B	Mould	6⅛	9⅞	133	2	Own	HI	2½
DeSoto 6AF	B&B	Mould	6⅛	9⅞	133	2	Own	HI	7¼
Dodge 6	B&B	Mould	6⅛	9⅞	133	2	Own	HI	2½
Duesenberg 8	Long	Mould	6½	11	137	4	Own	U	5
Ford V8	Long	Mould	5¾	9	137	2	Own	EI	2½
Graham 6	Illn	Mould	5⅛	7⅞	⅛	2	Warner	EI	. . .
Graham Spc. 6	Long	Mould	5¾	9	5/64	2	Warner	EI	2½
Graham 8	Long	Mould	5½	9¾	5/64	2	Warner	EI	2½
Graham Super C8	Long	Mould	5½	9¾	5/64	2	Warner	EI	3
Hudson Big 6	Own	Cork	5⅜	8⅝	203	. . .	Own	E	3
Hudson 8	Own	Cork	6⅜	9¾	203	. .	Own	E	3
Hupmobile 518	B&B	Mould	6⅛	9⅞	⅛	2	Warner	EI	2½
Hupmobile 521	B&B	Mould	6⅛	9⅞	⅛	2	Warner	EI	2½
Hupmobile 527	Long	Mould	5½	9¾	137	2	Warner	EI	2½
LaFayette 6	B&B	Mould	5¾	9	133	2	Own	EI	3
LaSalle 8	B&B	Mould	6⅛	9⅞	133	2	Own	HI	2
Lincoln V12	Long	Mould	7	12	137	2	Own	EI	6
Nash Adv. 6	B&B	Mould	6⅛	9⅞	⅛	2	Own	EI	3
Nash Adv. Amb. 8	B&B	Mould	6⅛	9⅞	⅛	2	Own	EI	3
Oldsmobile 6	B&B	Wove	5⅝	9	133	2	Own	HI	2
Oldsmobile 8	B&B	Wove	6⅛	9⅞	133	2	Own	HI	2
Packard 120	Long	Wove	6	10	137	2	Own	EI	2
Packard 8	Long	Mould	7	12	137	2	Own	EI	4½
Packard Super 8	Long	Mould	7	12	137	2	Own	EI	4½
Packard 12	Long	Mould	7	12	137	2	Own	EI	4½
Pierce Arrow 845	Long	Mould	6¼	9¾	130	4	Own	EI	4½
Pierce Arrow 1245	Long	Mould	6¼	9¾	130	4	Own	EI	4½
Pierce Arrow 1255	Long	Mould	6¼	9¾	130	4	Own	EI	4½
Plymouth 6	B&B	Mould	5⅝	9¼	133	2	Own	HI	2½
Pontiac 6	Own	Mould	6¼	9⅞	⅛	2	Own	EI	2½
Pontiac 8	Own	Mould	6¼	9⅞	⅛	2	Own	EI	2½
Reo 6A	B&B	Mould	6⅛	9⅞	133	2	Warner	EI	2
Reo S	B&B	Wove	6⅛	9⅞	133	2	Own	EI	3½
Studebaker Dict. 6	B&B	Mould	5¾	9	133	2	Warner	EI	3
Studebaker Com. 8	Long	Mould	5½	9¾	5/64	2	Warner	EI	5½
Studebaker Pres. 8	Long	Mould	5½	9¾	5/64	2	Warner	EI	5½
Stutz SV16	Long	Mould	6¼	9¾	137	4	Muncie	EI	6
Stutz DV32	Long	Mould	6¼	9¾	137	4	Muncie	EI	6
Terraplane 6	Own	Cork	5⅝	8⅝	203	. . .	Own	E	2
Willys 77	B&B	Mould	5⅛	7⅞	⅛	2	Own	U	1

1934

MAKE AND MODEL	Clutch						Transmission		
	Make	Type	Facing				Make	Type	Oil capacity, lbs.
			Diam.		Thickness	No. required			
			Inside	Outside					
Auburn Std. 6-52	Long	Mould	5¾	9	137	2	Warner	EI	3
Auburn Cust. 6-52	Long	Mould	5¾	9	137	2	Warner	EI	3
Auburn Std. 8-50	Long	Mould	5½	9¾	137	2	DG&M	EI	3
Auburn Cust. 8-50	Long	Mould	5½	9¾	137	2	DG&M	EI	3
Auburn 12-165	Long	Mould	6¼	9¾	130	4	DG&M	EI	6
Austin	Own	Mould	6½	8 1/16	⅛	2	Warner	U	5
Buick 34-50	Own	Wove	6¼	9½	130	2	Own	HI	1¾
Buick 34-60	Own	Wove	6¼	9⅞	130	2	Own	HI	4
Buick 34-90	Own	Wove	6½	9	135	4	Own	HI	4
Cadillac V8	Own	Wove	6½	9½	120	4	Own	CI	4½
Cadillac V12	Own	Wove	5⅞	10	120	4	Own	CI	4½
Cadillac V16	Own	Wove	6½	11	135	4	Own	CI	4½
Chevrolet Std. 6, ,33	Own	Mould	6¼	9	⅛	2	Own	E	1½
Chevrolet Mast. 6	Own	Mould	6¼	9	⅛	2	Own	EI	2½
Chrysler 6	B&B	Mould	6⅛	9⅞	133	2	Own	C	2¾
Chrysler 8	B&B	Mould	6⅛	9⅞	133	2	Own	C	3⅜
Chrysler Imp. 8	B&B	Mould	6⅛	9⅞	133	2	Own	C	3⅜
Chrysler Imp. Cust. 8	B&B	Mould	6⅛	11	133	2	Own	C	3⅜
Continental 4	B&B	Mould	5⅛	7⅞	⅛	2	Warner	E	....
DeSoto 6	B&B	Mould	6⅛	9⅞	133	2	Own	C	3⅜
Dodge 6	B&B	Mould	6⅛	9⅞	133	2	Own	C	2¾
Duesenberg	Long	Mould	6½	11	137	4	Own	U	5
Ford V8	Long	Mould	5¾	9	137	2	Own	EI	2½
Franklin Olym. 6	Long	Mould	6½	11	137	2	Warner	EI	4
Franklin Airman 6	Long	Mould	6½	11	137	2	Warner	EI	4
Franklin V12	Long	Mould	6¼	9¾	130	4	Warner	EI	5
Graham 6	Long	Mould	5½	9¼	137	2	Warner	EI	3
Graham 8	Long	Mould	5½	9¾	137	2	Warner	EI	3
Graham Cust. 8	Long	Mould	5½	9¾	137	2	Warner	EI	3
Hudson 8	Own	Cork	6½	10	203	. .	Own	E	2
Hupmobile 417	B&B	Mould	6⅛	9⅞	⅛	2	Warner	EI	2½
Hupmobile 421, 421A	B&B	Mould	6⅛	9⅞	⅛	2	Warner	EI	2½
Hupmobile 421J	B&B	Mould	6⅛	9⅞	⅛	2	Warner	EI	2½
Hupmobile 422	B&B	Mould	6⅛	9⅞	⅛	2	Warner	EI	2½
Hupmobile 426	Long	Mould	5½	9¾	137	2	DG&M	EI	3
Hupmobile 427	Long	Mould	5½	9¾	137	2	Warner	EI	2½
Lafayette Nash Blt	B&B	Mould	6⅛	9⅞	⅛	2	Own	EI	3
LaSalle 8	B&B	Mould	6⅛	9⅞	⅛	2	Own	HI	2
Lincoln V12-136, 145	Long	Mould	7	12	137	2	Own	EI	3
Nash Big 6	B&B	Mould	6⅛	9⅞	⅛	2	Own	EI	4
Nash Adv. 8	B&B	Mould	6⅛	9⅞	⅛	2	Own	EI	4
Nash Amb. 8	B&B	Mould	6⅛	11	⅛	2	Own	EI	4
Oldsmobile 6	B&B	Mould	5¾	9	⅛	2	Own	HI	2
Oldsmobile 8	B&B	Mould	6⅛	9⅞	⅛	2	Own	HI	2
Packard 8	Long	Mould	7	12	137	2	Own	EI	4½
Packard Super 8	Long	Mould	7	12	137	2	Own	EI	4½
Packard 12	Long	Mould	7	12	137	2	Own	EI	4½
Pierce Arrow 840A	Long	Mould	6¼	9¾	130	4	Own	EI	4½
Pierce Arrow 1240A	Long	Mould	6¼	9¾	130	4	Own	EI	4½
Pierce Arrow 1248A	Long	Mould	6¼	9¾	130	4	Own	EI	4½
Plymouth 6	B&B	Mould	5¾	9	133	2	Own	C	2¾
Pontiac 8	Own	Mould	6¼	10	⅛	2	Own	EI	2½
Reo S6	Long	Mould	6⅛	9¾	5/64	2	Own	EI	2
Reo Royale 8	Long	Mould	6¼	9¾	130	4	Own	EI	2
Studebaker Dict. 6	B&B	Mould	5¾	9	133	2	Warner	EI	3
Studebaker Com. 8	Long	Mould	5½	9¼	5/64	2	Warner	EI	3
Studebaker Pres. 8	Long	Mould	5½	9¾	5/64	2	Warner	EI	3
Stutz SV16	Long	Mould	6¼	9¾	130	4	Muncie	EI	4
Stutz DV32	Long	Mould	6¼	9¾	130	4	Muncie	EI	4
Terraplane 6	Own	Cork	5½	9	203	. . .	Own	E	2

B&B — Borg & Beck
C — Helical gears on all forward speeds
DG&M — Detroit Gear & Machine
E — Helical gears on second
H — Helical gears on all speeds
I — Synchronized shift on third and second
Illn — Illinois
Mould — Moulded
U — Conventional spur gears
Wove — Woven

Clutch and Transmission

1933

MAKE AND MODEL	Clutch						Transmission		
			Facing						
			Diam						
	Make	Type	Inside	Outside	Thickness	No required	Make	Type	Oil capacity, lbs
Auburn 8-101	Long	Mould	5½	9¾	137	2	DG&M	EI	3
Auburn 8-105	Long	Mould	5½	9¾	137	2	DG&M	EI	3
Auburn 12 161	Long	Mould	6¼	9¾	130	4	DG&M	EI	6
Auburn 12-165	Long	Mould	6¼	9¾	130	4	DG&M	EI	6
Austin	Own	Mould	6½	8 7/16	⅛	2	Own	U	
Buick 33-50	Own	Wove	6¼	9½	135	2	Own	EI	4
Buick 33 60	Own	Wove	6¼	9⅞	135	2	Own	EI	4
Buick 33 80	Own	Wove	6½	9	135	4	Own	EI	4
Buick 33 90	Own	Wove	6½	9	135	4	Own	EI	4
Cadillac V8	Own	Wove	5½	10	135	4	Own	EI	4½
Cadillac V12	Own	Wove	5½	10	5/64	4	Own	EI	4½
Cadillac V16	Own	Wove	6½	11	5/64	4	Own	EI	4½
Chevrolet	Own	M&W	6¼	9	⅛	2	Own	EI	2½
Chrysler 6	B&B	Mould	6¾	9⅞	⅛	2	Own	E	3⅜
Chrysler Royal 8	B&B	Mould	6¾	9⅞	⅛	2	Own	E	3⅜
Chrysler Imp 8	B&B	Mould	6⅛	9⅞	⅛	2	Own	E	3⅜
Chrysler IC8	B&B	Mould	6⅛	11 1/16	⅛	2	Own	F	5
Continental 4	Rock	Mould	5⅛	7⅞	⅛	2	Warner	E	
Continental Light 6	Rock	Mould	5⅛	9	⅛	2	Warner	E	
Continental Big 6	B&B	Mould	6⅛	8⅞	⅛	2	Warner	EI	3
Cord	Long	Mould	6½	11	137	2	DG&M	U	2½
Cunningham	Long	Mould	6½	11	⅛	4	DG&M	EI	4
DeSoto 6	B&B	Mould	6¾	9⅞	⅛	2	Own	E	3⅜
Dodge 6	B&B	Mould	5¾	9	133	2	Own	E	2¾
Dodge 8	B&B	Mould	6¾	9⅞	⅛	2	Own	E	3½
Duesenberg	Long	Mould	6½	11	137	4	Own	U	5
Essex Terraplane 6	Own	Cork					Own	E	2
Essex Terraplane 8	Own	Cork					Own	E	2
Ford B	Long	Mould	5¾	9	137	2	Own	EI	2½
Ford V8	Long	Mould	5¾	9	137	2	Own	EI	2½
Franklin Olym	Long	Mould	6	11	137	2	Warner	EI	4
Franklin 6	Bl ip	Wove	7¼	11⅞	⅛	2	Warner	EI	4
Franklin 12	Long	Mould	6¼	9¾	130	4	Warner	EI	5
Graham Std 6	Long	Mould	5½	9¼	5/64	2	Warner	EI	3
Graham Std Cust 8	Long	Mould	5½	9¾	5/64	2	Warner	EI	3
Hudson Super 6	Own	Cork					Own	EI	3
Hudson 8	Own	Cork					Own	EI	3
Hupmobile 321	B&B	Mould	6⅛	9⅞	⅛	2	Warner	EI	2½
Hupmobile 322	B&B	Mould	6⅛	9⅞	⅛	2	Warner	EI	2½
Hupmobile 326	Long	Mould	5½	9¾	137	2	DG&M	EI	3
LaSalle	Own	Wove	5½	10	135	4	Own	EI	4½
Lincoln V12-136	Long	Wove	6¼	9¾	137	4	Own	EI	6
Lincoln V12-145	Long	Wove	6¼	9¾	137	4	Own	EI	6
Marmon 16	Rusl	M&W	6⅛	9¾	c	9	Muncie	EI	5
Nash Big 6	B&B	Mould	6⅛	9⅞	½	2	Own	EI	3
Nash Std 8	B&B	Mould	6⅛	9⅞	⅛	2	Own	EI	3
Nash Spc 8	B&B	Mould	6⅛	9⅞	⅛	2	Own	EI	3
Nash Adv 8	B&B	Mould	6⅛	9⅞	⅛	2	Own	EI	3
Nash Amb 8	B&B	Mould	6¾	10⅞	⅛	2	Own	EI	3
Oldsmobile 6	B&B	Mould	6⅛	9⅞	⅛	2	Own	EI	2
Oldsmobile 8	B&B	Mould	6⅛	9⅞	⅛	2	Own	EI	2
Packard 8	Long	Mould	6	11	137	2	Own	EI	4½
Packard Super 8	Long	Mould	7	12	137	2	Own	EI	4½
Packard 12	Long	Mould	7	12	137	2	Own	EI	4½
Pierce Arrow 336	Long	Mould	6¼	9¾	130	4	Own	EI	5
Pierce Arrow 1236	Long	Mould	6¼	9¾	130	4	Own	EI	5
Pierce Arrow 1242, 47	Long	Mould	6¼	9¾	130	4	Own	EI	5
Plymouth 6	B&B	Mould	5¾	9	133	2	Own	E	2¾
Pontiac	Own	Mould	6¼	10	⅛	2	Own	EI	2½
Reo S	Long	Wove	6⅛	9¾	1/16	2	Own	EI	2
Reo Royale	Long	Mould	6¼	9¾	130	4	Own	EI	2
Rockne Six	B&B	Mould	5¾	9	⅛	2	Warner	EI	2¾
Studebaker 6	Long	Mould	5½	9¼	5/64	2	Own	EI	3
Studebaker Com 8	Long	Mould	5½	9¼	5/64	2	Own	EI	3
Studebaker Pres 8	Long	Mould	½	9¾	5/64			EI	4
Studebaker Spd Pres 8	B&B	Mould	6⅛	11 1/16	5/64	2	Own	EI	4
Stutz LAA	B&B	Mould	6¾	10⅞	⅛	2	DG&M	H	6
Stutz SV16, DV32	Long	Mould	6¼	9¾	130	4	Muncie	EI	4
Willys 77	Own	Mould				2	Own	U	1
Willys 99	Own	Mould				8	Own	EI	3

1932

MAKE AND MODEL	Clutch						Transmission		
			Facing						
			Diam						
	Make	Type	Inside	Outside	Thickness	No required	Make	Type	Oil capacity, lbs
Auburn 8-100	Long	Mould	5½	10	137	2	DG&M	EI	3
Auburn 12-160	Long	Mould	6¼	9¾	130	4	DG&M	EI	4
Austin	Own	Mould	6½	8 7/16	⅛	2	Own	U	
Buick 32-50	Own	M&W	6¼	9½	135	2	Own	EI	4
Buick 32-60	Own	M&W	6¼	9⅞	135	2	Own	EI	4
Buick 32 80	Own	M&W	6½	9	135	4	Own	EI	4
Buick 32-90	Own	M&W	6½	9	135	4	Own	EI	4
Cadillac V8	Own	Wove	5½	10	135	4	Own	EI	4½
Cadillac V12	Own	Wove	5½	10	5/64	4	Own	EI	4½
Cadillac V16	Own	Wove	6½	11	5/64	4	Own	EI	4½
Chevrolet	Own	Mould	6¼	9	⅛	2	Own	GI	2
Chrysler 6	B&B	Mould	6¾	9⅞	⅛	2	Own	E	3½
Chrysler 8	B&B	Mould	6¾	9⅞	⅛	2	Own	F	3½
Chrysler Imp Ip Cst 8	B&B	Mould	6⅛	11 1/16	⅛	2	Own	F	5¼
Cord 8	Long	Mould	6½	11	137	2	DG&M	U	2½
Cunningham	Own	Wove	6 1/16	8½	3/32	14	DG&M	EI	4
DeSoto 6	B&B	Mould	6⅛	8⅞	⅛	2	Own	E	3½
DeVaux 6-75	B&B	Mould	6⅛	8⅞	⅛	2	NewP	U	
Dodge 6	B&B	Mould	6⅛	8⅞	⅛	2	Own	E	3½
Dodge 8	B&B	Mould	6¾	9⅞	⅛	2	Own	E	3½
Duesenberg	Long	Mould	6½	11	137	4	Warner	U	5
Durant 619	B&B	Mould	6⅛	8⅞	⅛	2	Warner	U	2
Essex	Own	Cork					Own	EI	3
Ford A	Long	Mould	5¾	9	5/64	2	Own	EI	1
Franklin	BLip	Wove	7¼	11⅞	⅛	2	Warner	EI	4
Graham 6	Long	Mould	5½	9¼	5/64	2	Warner	G	1
Graham 8	Long	Mould	5½	9¾	5/64	2	Warner	EI	3
Hudson 8	Own	Cork					Own	EI	3
Hupmobile 214	B&B	Mould	6⅛	8⅞	⅛	2	Warner	E	3
Hupmobile 216	B&B	Mould	6¾	9⅞	⅛	2	Warner	EI	3
Hupmobile 218	B&B	Mould	6¾	9⅞	⅛	2	Warner	E	3
Hupmobile 221	Long	Mould	5½	10	137	2	Warner	E	4
Hupmobile 222	B&B	Mould	6¾	9⅞	⅛	2	Warner	EI	3
Hupmobile 225 237	Long	Mould	6¼	9¾	130	4	Warner	E	4
Hupmobile 226	Long	Mould	5½	10	137	2	DG&M	EI	3
LaSalle	Own	Wove	5½	10	135	4	Own	EI	4½
Lincoln 12	Long	Wove	6¼	9¾	137	4	Own	EI	6
Marmon 8-125						2	DG&M	E	4
Marmon 16	Rusl	Wove	6⅛	9¾	1/16	4	Muncie	E	5
Nash 960	B&B	Mould	6⅛	8⅞	⅛	2	Own	EI	2
Nash 970	B&B	Mould	6¾	9 1/16	⅛	2	Own	EI	2
Nash 980	B&B	Mould	6⅛	9⅞	⅛	2	Own	EI	3
Nash 990	B&B	Mould	6¾	10⅞	⅛	2	Own	EI	3
Oldsmobile 6	B&B	Mould	6⅛	8⅞	⅛	2	Muncie	GI	2
Oldsmobile 8	B&B	Mould	6¾	9⅞	⅛	2	Muncie	GI	2
Packard 901 902	Long	Mould	6½	11	137	2	Own	HJ	4
Packard 903 904	Long	Mould	6¼	9¾	130	4	Own	HJ	4
Peerless Mast Cust 8	Rock	Mould	6¾	10¾	3/32	8	Warner	EI	5
Pierce Arrow 54	Long	Mould	6¼	9¾	130	4	Own	LI	5
Pierce Arrow	Long	Mould	6¼	9¾	130	4	Own	EI	5
Pierce Arrow 52, 51	Long	Mould	6¼	9¾	130	4	Own	EI	5
Plymouth	B&B	Mould	6⅛	8⅞	1/16	2	Warner	E	3½
Pontiac 6	Own	Mould	6⅛	9⅝	3/32	2	Muncle	EI	4¼
Pontiac 8	Own	Mould	6¼	10⅝	3/32	2	Muncle	EI	4¼
Reo 6-21	Long	Mould	5½	9¾	137	2	Own	C	3
Reo 8-21 25	Long	Mould	5½	10	137	2	Own	C	3
Reo 31 35	Long	Mould	6¼	9¾	130	4	Own	C	2
Rockne Six 65	B&B	Mould	6⅛	8⅞	⅛	2	Own	EI	1
Rockne Six 75	Long	Mould	5½	9¼	5/64	2	Own	EI	2¾
Studebaker 6	Long	Mould	5½	9¼	5/64	2	Own	EI	3
Studebaker Dict 8	Long	Mould	5½	9¼	5/64	2	Own	EI	3
Studebaker Clm 8	Long	Mould	5½	9¾	5/64	2	Own	EI	3
Studebaker Pres 8	B&B	Mould	6⅛	11 1/16	5/64	2	Own	EI	4
Stutz LAA	B&B	Wove	6¾	10⅞	⅛	2	DG&M	H	6
Stutz SV16 DV32	Long	Mould	6¼	9¾	130	4	Muncie	EI	4
Willys Overland 6-90	B&B	Mould				2	Own	U	1½
Willys Overland 8-88	B&B	Mould				2	Own	U	2
Willys Knight 95	Rock	Mould				8	Own	U	1½
Willys Knight 66D	Rock	Mould				8	Own	U	2

B&B — Borg & Beck
BLip — Brown Lipe
c — 1½ 1⅝
C — Herringbone gears on second
DG&M — Detroit Gear and Machine
E — Helical gears on second
F — Constant-mesh helical gears on third
G — Constant-mesh spur gears on second
H — Constant-mesh spur gears on third
I — Synchronized shift on second and third
J — Synchronized shift on fourth and third
M&W—Moulded and woven
Mould — Moulded
NProc—New Process
Rock — Rockford
Rusl — Russell
U—Spur gears
Wove — Woven

Rear Axle and Tires

1935

MAKE AND MODEL	Make	Rear axle: Pinion adjustment	Rear axle: Pinion bearing adjust.	Rear axle: Pinion bearing is mounted in sleeve	Oil capacity, pounds	Tires: Size	Tires: Number of plies	Tires: Inflation pressure: Front	Tires: Inflation pressure: Rear
Auburn 653	Clmba	Sc	Sh	No	4	5 50x17	4	35	35
Auburn 851	Clmba	Sc	Sc	No	4	6 50x16	4	28	28
Austin 4	Spicer	Sh	No	No	¾	3 75x18	4	26	26
Buick 40	Own	Sh	Sh	No	3	6 25x16	4	26	26
Buick 50	Own	Sc	Sc	Yes	3	7 00x16	4	26	26
Buick 60	Own	Sc	Sc	Yes	4⅝	7 50x16	4	24	24
Buick 90	Own	Sc	Sc	Yes	5½	7 50x16	6	28	28
Cadillac V8	Own	Sh	No	Yes	6	7 00x17	7	35	35
Cadillac V12	Own	Sh	No	Yes	6	7 50x17	6	35	35
Cadillac V16	Own	Sh	No	Yes	6	7 50x17	6	35	35
Chevrolet Std 6	Own	Sh	No	No	3	5 25x17	4	32	32
Chevrolet Mast 6	Own	Sh	No	No	4½	5 50x17	4	28	28
Chrysler 6AS	Own	Sh	Sh	Yes	3¼	6 25x16	4	28	28
Chrysler 8AS	Own	Sh	Sh	Yes	3¼	6 50x16	4	28	28
Chrysler 8AF	Own	Sh	Sh	Yes	4¼	7 00x16	4	28	28
Chrysler Imp 8AF	Own	Sh	Sh	Yes	4¼	7 50x16	6	28	28
Chrysler IC8AF-137	Own	Sh	Sh	Yes	4¼	7 50x16	6	28	28
Chrysler IC8AF-146	Own	Sh	Sh	Yes		7 50x17	6	28	28
DeSoto 6AS	Own	Sh	Sh	Yes	3¼	6 25x16	4		
DeSoto 6AF	Own	Sh	Sh	Yes	3¼	6 50x16	4		
Dodge 6	Own	Sh	Sh	Yes	3¼	6 00x16	4	28	28
Duesenberg 8	Own	Sc	No	Yes	4	7 00x18	6	40	40
Ford V8	Own	No	Sc	No	2¼	6 00x16	4	30	30
Graham 6	Spicer	Sh		No		5 25x17	4		
Graham Spc 6	Spicer	Sh		No	2½	6 00x16	4	28	28
Graham 8	Spicer	Sh		No	3	6 50x16	4	28	28
Graham Super C8	Spicer	Sh		No	4	7 00x16	4	28	28
Hudson Big 6	Own	Sh	Sh	No	2¾	6 00x16	4	22	28
Hudson 8	Own	Sh	Sh	No	2¾	6 25x16	4	22	28
Hupmobile 518	Spicer	Sh	Sh	No	2	6 00x16	4	28	28
Hupmobile 521	Spicer	Sh	Sh	No	3½	6 50x16	4	22	26
Hupmobile 527	Spicer	Sh	Sh	No	3½	7 00x16	4	22	26
LaFayette 6	Own	Sh	Sh	No	2	6 00x16	4	30	30
LaSalle 8	Own	Sc	Sc	No	3	7 00x16	4	25	25
Lincoln V12	Tim	Sh	Sh	No	6	7 50x17	6	45	45
Nash Adv 6	Own	Sh	Sh	No	6	6 25x16	4	30	30
Nash Adv Amb 8	Own	Sh	Sh	No	6	6 50x16	4	28	28
Oldsmobile 6	Own	Sh	No	No	2½	6 25x16	4	25	30
Oldsmobile 8	Own	Sh	No	No	2½	7 00x16	4	25	25
Packard 120	Own				4¼	6 50x16	4	26	26
Packard 8	Own	Sh	Sc	Yes	6	7 00x17	6	35	35
Packard Super 8	Own	Sh	Sc	Yes	6	7 00x17	6	35	35
Packard 12	Own	Sh	Sc	Yes	6	7 50x17	6	35	35
Pierce Arrow 845	Own	Sc	Sh	Yes		7 00x17	6	40	40
Pierce Arrow 1245	Own	Sc	Sh	Yes		7 50x17	6	40	40
Pierce Arrow 1255	Own	Sc	Sh	Yes		7 50x17	6	40	40
Plymouth 6	Own	Sc	Sh	Yes	3¼	6 00x16	4		
Pontiac Std 6	Own	Sh	Sh	Yes	4½	6 00x16	4	25	30
Pontiac DL6	Own	Sh	Sh	Yes	4½	6 00x16	4	25	30
Pontiac 8	Own	Sh	Sh	Yes	4½	6 50x16	4	25	30
Reo 6A	Spicer	Sh	Sh	No	2	6 25x16	4	28	28
Reo S	Own	Sh	Sh	No	3	6 50x16	4	22	28
Studebaker Dict 6	Spicer	Sh	Sh	No	1¾	6 00x16	4	30	30
Studebaker Com 8	Own	Sc	Sc	No	5	6 50x16	4	30	30
Studebaker Pres 8	Own	Sc	Sc	No	5	7 00x16	4	30	30
Stutz SV16	Tim	Sh	Sh	Yes	3	7 00x18	6	38	38
Stutz DV32	Tim	Sh	Sh	Yes	3	7 00x18	6	38	38
Terraplane 6	Own	Sh	Sh	No	2¾	6 00x16	4	22	28
Willys 77	Own	Sh	Sh	No	1	5 00x17	4	30	30

1934

MAKE AND MODEL	Make	Rear axle: Pinion adjustment	Rear axle: Pinion bearing adjust	Rear axle: Pinion bearing is mounted in sleeve	Oil capacity, pounds	Tires: Size	Tires: Inflation pressure: Front	Tires: Inflation pressure: Rear
Auburn Std 6-52	Clmba	Sc	Sc	No	4	5 50x17	35	35
Auburn Cust 6-52	Clmba	Sc	Sc	No	4	6 25x16	35	35
Auburn Std 8-50	Clmba	Sc	Sc	No	4	6 25x16	35	35
Auburn Cust 8-50	Clmba	Sc	Sc	No	4	6 50x16	35	35
Auburn 12-165	Clmba	Sc	Sc	No	4	6 00x17	38	38
Austin	Spicer	Sh	No	No	¾	3 75x18	26	26
Buick 34 50	Own	Sc	Sc	Yes	3	7 00x16	26	26
Buick 34 60	Own	Sc	Sc	Yes	4⅝	7 50x16	24	24
Buick 34-90	Own	Sc	Sc	Yes	5½	7 50x16	28	28
Cadillac V8	Own	Sh	No	Yes	6	7 00x17	35	35
Cadillac V12	Own	Sh	No	Yes	6	7 50x17	35	35
Cadillac V16	Own	Sh	No	Yes	6	7 50x17	35	35
Chevrolet Std 6 33	Own	Sh	Sh	No	3¼	5 25x17	32	32
Chevrolet Mast 6	Own	Sh	Sh	No	4½	5 50x17	28	28
Chrysler 6	Own	Sh	Sh	Yes	4	6 50x16	22	28
Chrysler 8	Own	Sh	Sh	Yes	4—	7 00x16	28	28
Chrysler Imp 8	Own	Sh	Sh	Yes	4—	7 50x16	28	28
Chrysler Imp Cust 8	Own	Sh	Sh	Yes	8¼	7 50x17	38	38
Continental 4	NProc	Sh	Sh	No	2	5 25x17	30	30
DeSoto 6	Own	Sh	Sh	Yes	3¼	6 50x16	26	26
Dodge 6	Own	Sh	Sh	Yes	3¼	6 25x16	28	28
Duesenberg	Own	Sh	No	Yes	4	7 00x18	40	40
Ford V8	Own	No	Sc	No	2¼	5 50x17	35	35
Franklin Olym 6	Own	Sh	No	No	5	6 00x17	35	35
Franklin Airman 6	Own	Sh	Sc	No	3	7 00x17	36	36
Franklin V12	Own	Sc	Sc	No	4	7 50x17	36	36
Graham 6	Spicer	Sh	Sh	No	4	6 25x16	28	28
Graham 8	Spicer	Sh	Sh	No	4	6 50x16	28	28
Graham Cust 8	Spicer	Sh	Sh	No	4	7 00x16	28	28
Hudson 8	Own	Sh	Sh	No	3	6 00x16	26	26
Hupmobile 417	Spicer	Sh	Sh	No	2	6 00x16	28	28
Hupmobile 421, 421A	Spicer	Sh	Sh	No	3½	6 00x17	32	32
Hupmobile 421J	Spicer	Sh	Sh	No	3½	6 50x16	28	28
Hupmobile 422	Spicer	Sh	Sh	No	4½	6 00x17	32	32
Hupmobile 426	Spicer	Sh	Sh	No	4½	6 50x17	32	32
Hupmobile 427	Spicer	Sh	Sh	No	3½	7 00x16	28	28
Lafayette Nash Blt	Spicer	Sh	Sh	No	6	5 50x17	35	35
LaSalle 8	Own	Sc	Sc	No	2½	7 00x16	28	28
Lincoln V12 136	Tim	Sh	Sh	No	6½	7 00x18	45	45
Lincoln V12-145	Tim	Sh	Sh	No	6½	7 50x18	45	45
Nash Big 6	Own	Sh	Sh	No	6	5 50x17	35	35
Nash Advanced 8	Own	Sh	Sh	No	6	6 50x16	35	35
Nash Ambassador 8	Own		Sc	No	12	7 00x17	35	35
Oldsmobile 6	Own	Sh	No	No	2½	5 50x17	35	35
Oldsmobile 8	Own	Sh	No	No	2½	7 00x16	25	25
Packard 8	Own	Sh	Sc	Yes	6	7 00x17	35	35
Packard Super 8	Own	Sh	Sc	Yes	6	7 00x17	35	35
Packard 12	Own	Sh	Sc	Yes	6	7 50x17	35	35
Pierce Arrow 840A	Own	Sc	Sh	Yes	6	7 00x17	40	40
Pierce Arrow 1240A	Own	Sc	Sh	Yes	6	7 50x17	40	40
Pierce Arrow 1248A	Own	Sc	Sh	Yes	6	7 50x17	40	40
Plymouth 6	Own	Sc	Sh	Yes	3¼	5 25x17	32	32
Pontiac 8	Own	Sh	Sc	Yes	4½	6 00x17	28	28
Reo S6	Own	Sh	Sh	No	3	6 00x17	35	35
Reo Royale 8	Own	Sh	Sh	Yes	3	6 50x18	35	35
Studebaker Dict 6	Spicer	Sh	Sh	No	1¾	5 50x17	35	35
Studebaker Com 8	Spicer	Sh	Sh	No	2½	6 00x17	35	35
Studebaker Pres 8	Spicer	Sh	Sh	No	4¼	6 50x17	35	35
Stutz SV16	Tim	Sh	Sh	Yes	3	7 00x18	38	38
Stutz DV32	Tim	Sh	Sh	Yes	3	7 00x18	38	38
Terraplane 6	Own	Sh	Sh	No	3	5 25x17	28	28

Clmba — Columbia NProc — New Process Sc — Screw Sh — Shim Tim — Timken

Rear Axle and Tires

1933

MAKE AND MODEL	Make	Rear axle: Pinion adjustment	Rear axle: Pinion bearing adjust	Rear axle: Pinion bearing is mounted in sleeve	Oil capacity, pounds	Tires: Size	Tires: Inflation pressure: Front	Tires: Inflation pressure: Rear
Auburn 8-101	Clmba	Sc	Sc	No	4	5 50x17	35	35
Auburn 8-105	Clmba	Sc	Sc	No	6	6 00x17	35	35
Auburn 12-161	Clmba	Sc	Sc	No	4	6 00x17	38	38
Auburn 12-165	Clmba	Sc	Sc	No	7	6 00x17	38	38
Austin	Salsby	Sh	No	No	¾	3 75x18	26	26
Buick 33-50	Own	Sc	Sc	Yes	3	6 00x17	35	35
Buick 33-60	Own	Sc	Sc	Yes	4½	6 50x17	35	35
Buick 33-80	Own	Sc	Sc	Yes	5½	7 00x17	35	35
Buick 33-90	Own	Sc	Sc	Yes	5½	7 00x17	35	35
Cadillac V8	Own	Sh	No	Yes	6	7 00x17	40	40
Cadillac V12	Own	Sh	No	Yes	6	7 50x17	40	40
Cadillac V16	Own	Sh	No	Yes	6	7 50x17	40	40
Chevrolet	Own	Sh	Sh	No	4½	5 25x18	32	32
Chrysler 6	Own	Sh	Sh	Yes	3¼	5 50x17	35	35
Chrysler Royal 8	Own	Sh	Sh	Yes	4½	6 00x17	35	35
Chrysler Imp 8	Own	Sh	Sh	Yes	4½	6 50x17	40	35
Chrysler 1C8	Own	Sh	Sh	Yes	8¼	7 50x17	40	35
Continental 4	NProc	Sh	Sh	No	2	5 25x17	30	30
Continental Light 6	NProc	Sh	Sh	No	2	5 25x17	30	30
Continental Big 6	NProc	Sh	Sh	Yes		5 50x17		
Cord	Clmba	Sh	Sh	No		7 00x18	35	35
Cunningham	Tim	Sh	Sh	No	6	7 00x20	40	35
DeSoto 6	Own	Sh	Sh	Yes	3¼	5 50x17	40	35
Dodge 6	Own	Sh	Sh	Yes	3¼	6 00x16	28	28
Dodge 8	Own	Sh	Sh	Yes	4¼	6 50x17		
Duesenberg	Own	Sh	No	Yes	4	7 00x18	40	40
Essex Terraplane 6	Own	Sh	Sh	No	3	5 25x17	28	28
Essex Terraplane 8	Own	Sh	Sh	No	3	6 00x16	26	26
Ford B	Own	No	Sc	No	2¼	5 25x18	35	35
Ford V8	Own	No	Sc	No	2¼	5 25x18	35	35
Franklin Olym	Own	Sh	No	No	5	6 00x17	35	35
Franklin 6	Own	Sh	Sc	No	3	6 50x19	36	36
Franklin 12	Own	Sc	Sc	No	4	7 50x17		
Graham Std 6	Salsby	Sh	Sh	No	4	5 50x17	40	35
Graham Std Cust 8	Salsby	Sh	Sh	No	4	6 00x17	40	35
Hudson Super 6	Own	Sh	Sh	No	4	5 25x18	32	32
Hudson 8	Own	Sh	Sh	No	4	6 00x17	32	32
Hupmobile 321	Salsby	Sh	Sh	No	3½	6 00x17	32	32
Hupmobile 322	Own	Sh	Sh	No	4½	6 00x17	32	32
Hupmobile 326	Own	Sh	Sh	No	4½	6 50x17	32	32
LaSalle	Own	Sh	No	Yes	6	7 00x17	40	40
Lincoln V12-136	Tim	Sh	Sh	No	6½	7 00x18	45	45
Lincoln V12-145	Tim	Sh	Sh	No	6½	7 50x18	45	45
Marmon 16	Salsby	Sh	Sh	No	4½	7 00x18	40	40
Nash Big 6	Own	Sh	Sh	No	6	5 50x17	35	35
Nash Std 8	Own	Sh	Sh	No	6	5 50x17	35	35
Nash Spc 8	Own	Sh	Sh	No	6	5 50x18	35	35
Nash Adv 8	Own	No	Sh	No	4½	6 50x17	35	35
Nash Amb 8	Own	No	Sh	No	6	7 00x18	35	35
Oldsmobile 6	Own	Sc	Sc	Yes	2½	5 50x17	35	35
Oldsmobile 8	Own	Sc	Sc	Yes	2½	6 00x17	35	35
Packard 8	Own	Sh	Sc	Yes	6	7 00x17	35	35
Packard Super 8	Own	Sh	Sc	Yes	6	7 00x17	35	35
Packard 12	Own	Sh	Sc	Yes	6	7 50x17	35	35
Pierce Arrow 836	Own	Sh	Sh	Yes		7 00x17	40	40
Pierce Arrow 1236	Own	Sh	Sh	Yes		7 00x17	40	40
Pierce Arrow 1242, 47	Own	Sh	Sh	Yes	6	7 50x17	40	40
Plymouth 6	Own	Sc	Sh	Yes	3¼	5 25x17	33	33
Pontiac 8	Own	Sh	Sc	Yes	4½	5 50x17	30	30
Reo S	Own	Sh	Sh	No	3	6 00x17	35	35
Reo Royale	Own	Sh	Sh	Yes	3	6 50x18	35	35
Rockne Six	Salsby	Sh	Sh	No	2½	5 25x17	35	35
Studebaker 6	Own	Sc	Sc	No	4	5 50x17	35	35
Studebaker Com 8	Own	Sc	Sc	No	4	6 00x17	35	35
Studebaker Pres 8	Own	Sc	Sc	No	5	6 50x17	35	35
Studebaker Spd Pres 8	Own	Sc	Sh	Yes	7	7 00x17	40	40
Stutz LAA	Salsby	Sh	Sh	Yes	4	6 00x19	35	35
Stutz SV16, DV32	Tim	Sh	Sh	Yes	3	7 00x18	35	35
Willys 77	Own	Sh	Sh	No	1	5 00x17	30	30
Willys 99	Own	Sh	Sh	No	3	5 50x17	30	30

1932

MAKE AND MODEL	Make	Rear axle: Pinion adjustment	Rear axle: Pinion bearing adjust	Rear axle: Pinion bearing is mounted in sleeve	Oil capacity, pounds	Tires: Size	Tires: Inflation pressure: Front	Tires: Inflation pressure: Rear
Auburn 8-100	Clmba	Sc	Sc	No	4	6 00x17	35	35
Auburn 12-160	Clmba	Sc	Sc	No	6	6 00x17	35	35
Austin	Salsby	Sh	No	No	¾	3 75x18	23	23
Buick 32-50	Own	Sc	Sc	Yes	3	5 50x18	35	35
Buick 32-60	Own	Sc	Sc	Yes	7½	6 00x18	35	35
Buick 32 80	Own	Sc	Sc	Yes	8½	7 00x18	35	35
Buick 32-90	Own	Sc	Sc	Yes	8½	7 00x18	35	35
Cadillac V8	Own	Sh	No	Yes	6	7 00x17	40	40
Cadillac V12	Own	Sh	No	Yes	6	7 50x17	40	40
Cadillac V16	Own	Sh	No	Yes	6	7 50x18	40	40
Chevrolet	Own	Sh	Sh	No	4	5 25x18	32	32
Chrysler 6	Own	Sh	Sh	Yes	3¼	5 50x18	40	35
Chrysler 8	Own	Sh	Sh	Yes	4⅝	6 50x17	40	40
Chrysler Im Ip Cst 8	Own	Sh	Sh	Yes	8¼	7 00x17	40	40
Cord 8	Clmba	Sh	No	No		7 00x18	35	35
Cunningham	Tim	Sh	Sh		6	7 00x20	40	35
DeSoto 6	Own	Sh	Sh	Yes	3¼	5 25x18	40	35
DeVaux 6-75	NProc	Sh	Sh	Yes		5 00x19		
Dodge 6	Own	Sh	Sh	Yes	4¼	5 00x18	40	35
Dodge 8	Own	Sh	Sh	Yes	4¼	6 00x18	40	35
Duesenberg	Own	Sh	No	Yes	4	7 00x18	40	40
Durant 619	Adams	Sh	Sh	No	2	4 75x19	36	34
Essex	Own	Sh	Sh	No	4	5 25x18	32	32
Ford A	Own	No	Sc	Yes	1½	5 25x18	35	35
Franklin	Own	Sh	Sc	No	3	6 50x19	36	36
Graham 6	Salsby	Sh	Sh	No	4	5 50x17	40	35
Graham 8	Salsby	Sh	Sh	No	4	6 00x17	40	35
Hudson 8	Own	Sh	Sh	No	4	6 00x17	32	32
Hupmobile 214	Salsby	Sh	Sh	No	3	5 50x19	35	35
Hupmobile 216	Salsby	Sh	Sh	No	4	5 50x18	32	32
Hupmobile 218	Salsby	Sh	Sh	No	4	5 50x19	35	35
Hupmobile 221	Own	Sc	Sc	No	5	6 00x19	35	35
Hupmobile 222	Own	Sh	Sh	No	4½	6 00x17	32	32
Hupmobile 225 237	Own	Sh	Sh	Yes	6	6 50x19	35	35
Hupmobile 226	Own	Sh	Sh	No	4½	6 50x17	32	32
LaSalle	Own	Sh	No	Yes	6	7 00x17	40	40
Lincoln 12	Tim	Sh	Sh	No	6½	7 50x18	45	45
Marmon 8-125	Salsby	Sc	Sc	Yes	4½	6 00x18	35	35
Marmon 16	Salsby	Sh	Sh	Yes	4½	7 00x18	40	40
Nash 960	Own	Sh	Sc	No	6	5 00x19	30	30
Nash 970	Own	Sh	Sc	No	6	5 25x19	30	30
Nash 980	Own	Sh	Sc	No	4	6 00x18	30	30
Nash 990	Own	Sc	Sc	No	7	6 50x19	30	35
Oldsmobile 6	Own	Sc	No	Yes	2½	6 00x17	35	35
Oldsmobile 8	Own	Sc	No	Yes	2½	6 00x17	35	35
Packard 901, 902	Own	Sc	Sc	Yes	6	6 50x19	40	40
Packard 903 904	Own	Sc	Sc	Yes	7	7 00x19	40	40
Peerless Master 8	Salsby	Sc	No	Yes	3	6 00x19	35	35
Peerless Custom 8	Salsby	Sc	No	Yes	5	6 50x19	35	35
Pierce Arrow 54	Own	Sc	Sg	Yes	6	6 50x18	40	40
Pierce Arrow 53	Own	Sc	Sh	Yes	6	7 00x18	40	40
Pierce Arrow 52, 51	Own	Sc	Sh	Yes	6	7 00x18	40	40
Plymouth	Own	Sh	Sh	Yes	3¼	4 75x19	40	35
Pontiac 6	Own	Sc	No	Yes	1½	5 25x18	32	32
Pontiac 8	Own	Sc	Sc	No	3	6 00x17	35	35
Reo 6-21	Own	Sh	No	No	5	6 00x18	35	35
Reo 8-21 25	Own	Sh	No	No	5	6 00x17	35	35
Reo 31 35	Own	Sh	No	Yes	3	6 50x18	35	35
Rockne Six 65	Salsby	Sh	Sh	No	3	5 25x18	35	35
Rockne Six 75	Own	Sc	Sc	No	4	5 50x18	35	35
Studebaker 6	Own	Sc	Sc	No	4	5 50x18	35	35
Studebaker Dict 8	Own	Sc	Sc	No	4	5 50x18	35	35
Studebaker Com 8	Own	Sc	Sc	No	5	6 00x18	40	40
Studebaker Pres 8	Own	Sc	Sc	Yes	7	6 50x18	40	40
Stutz LAA	Salsby	Sh	Sh	Yes	4	6 00x19	38	38
Stutz SV16	Tim	Sh	Sh	Yes	3	6 50x20	38	38
Stutz DV32	Tim	Sh	Sh	Yes	3	7 00x20	38	38
Willys Overland 6-90	Own	Sc	Sc	No	3	5 25x18	30	30
Willys Overland 8-88	Own	Sc	Sc	No	4	5 50x18	30	30
Willys Knight 95	Own	Sc	Sc	No	3	5 50x18	30	30
Willys Knight 66D	Own	Sc	Sc	No	4½	6 00x17	36	36

Clmba — Columbia NProc — New Process Salsby — Salisbury Sc — Screw Sh — Shim Tim — Timken

Brakes

1935

MAKE AND MODEL	Foot brake: Make	Type Lining	Rear: Drum diameter	Rear Lining: Length per wheel	Width	Thickness	Clearance	Per cent braking on rear	Hand brake: Location	Internal or external	Drum diameter	Lining: Length per drum	Width	Thickness	Clearance
Auburn 653	Bendix	Mould	12	24 3/32	1 1/2	3/16	.010	50	Rear S	erv	ice				
Auburn 851 ..	Bendix	Mould	12	24 3/32	2	3/16	.010	50	Rear S	erv	ice				
Austin 4	Own		8	17	1 1/8	3/16		50	4 Whe	els					
Buick 40	Bendix	Mould	12	25 7/8	1 3/4	3/16	.010	50	4 Whe	els					
Buick 50	Own	M&W	12	25 1/8	1 3/4	3/16		50	4 Whe	els					
Buick 60	Own	M&W	14	28 3/32	1 3/4	3/16		50	4 Whe	els					
Buick 90	Own	M&W	14	28 3/32	2 1/4	3/16		50	4 Whe	els					
Cadillac V8	Own	Wove	15	29 3/32	2	k	.007	40	Rear S	erv	ice				
Cadillac V12	Own	Wove	15	29 3/32	2	k	.007	40	Rear S	erv	ice				
Cadillac V16 .. .	Own	Wove	15	29 3/32	2	k	.007	40	Rear S	erv	ice				
Chevrolet Std. 6 ...	Own	SMold	10	20 1/4	1 3/4	3/16		50	4 Whe	els					
Chevrolet Mast. 6	Own	SMold	12	24 5/32	1 3/4	3/16		50	4 Whe	els					
Chrysler 6AS .	Lockhd	Mould	10	19 11/16	2	1/16	a	50	Trans	Ext	6	18 1/32	2	3/16	1/16
Chrysler 8AS	Lockhd	Mould	11	22 5/32	2	3/16	a	50	Trans	Ext	6	18 1/32	2	1/32	1/16
Chrysler 8AF	Lockhd	Wove	13	24 3/32	2	1/4	a	50	Trans	Ext	7	21 13/16	2 1/2	3/16	1/16
Chrysler Imp. 8AF	Lockhd	Wove	13	24 3/32	2	1/4	a	50	Trans	Ext	7	21 13/16	2 1/2	3/16	1/16
Chrysler IC8AF-137	Lockhd	Wove	13	24 3/32	2	1/4	a	50	Trans	Ext	7	21 13/16	2 1/2	3/16	1/16
Chrysler IC8AF-146	Lockhd	Mould	15	30 1/4	2 1/2	1/4	a	50	Trans	Ext	8		2 3/8	1/4	1/16
DeSoto 6AS	Lockhd	Mould	10	19 1/16	2	3/16	a	50	Trans	Ext	6	18 1/32	2	3/16	1/16
DeSoto 6AF.....	Lockhd	Mould	11	22 5/32	2	3/16	a	50	Trans	Ext	7	21 13/16	2 1/2	3/16	1/16
Dodge 6	Lockhd	Mould	10	19 1/2	2	3/16	b	50	Trans	Ext	6	18 1/32	2	5/32	1/16
Duesenberg 8.....	Lockhd	Mould	15	28 3/4	2 1/4	1/4	.010	50	Trans	Ext	7 3/4	16 1/2	3	1/4	.025
Ford V8.....	Own	SMold	12	31	1 1/2	11/64	.010	50	4 Whe	els					
Graham 6.....	Bendix	Mould	9	..	1 3/4			50	Rear S	erv	ice				
Graham Spc. 6.....	Lockhd	Mould	11	24	1 3/4	1/4	1/32	50	Trans	Ext	6	18 5/16	2	5/32	1/32
Graham 8	Lockhd	Mould	13	26	2	3/16	1/32	50	Trans	Ext	6	18 5/16	2	5/32	1/32
Graham Super C8...	Lockhd	Mould	13	26	2	3/16	1/32	50	Trans	Ext	6	18 5/16	2	5/32	1/32
Hudson Big 6	Bendix	Mould	9	19 3/16	2 1/4	3/16	c	50	4 Whe	els					
Hudson 8	Bendix	Mould	9	19 3/16	2 1/4	3/16	c	50	4 Whe	els					
Hupmobile 518	Lockhd	Mould		...				50	Trans						
Hupmobile 521	Midlnd	Mould	12	31 1/8	1 13/32	210		50	4 Whe	els					
Hupmobile 527.....	Midlnd	Mould	14	36 5/16	1 13/32	210		50	4 Whe	els					
LaFayette 6.....	Bendix	Mould	11	23 3/4	1 3/4	5/32	.010	50	4 Whe	els					
LaSalle 8	Bendix	Mould	12	25 7/8	2	3/16	.010	44	Rear S	erv	ice				
Lincoln V12.....	Bendix	M&W	16	34	2 1/2	1/4	c	50	4 Whe	els					
Nash Big 6.....	Bendix	Mould	11	23 13/16	1 3/4	5/32	.010	50	Rear S	erv	ice				
Nash Adv. 8.....	Bendix	Mould	11	23 3/32	2 1/4	5/32	.010	50	Rear S	erv	ice				
Oldsmobile 6	Bendix	M&W	11	23 3/4	2	1/8	e	45	Rear S	erv	ice				
Oldsmobile 8..... .	Bendix	M&W	12	25 1/16	2	3/16	e	45	Rear S	erv	ice				
Packard 120	Bendix	Mould	12	26	1 3/4	3/16	.010	50	Rear S	erv	ice				
Packard 8	Bendix	M&SM	14	30 1/4	2 1/4	1/4	.010	50	4 Whe	els					
Packard Super 8...	Bendix	M&SM	14	30 1/4	2 1/4	1/4	.010	50	4 Whe	els					
Packard 12	Bendix	M&SM	14	32 1/4	2 1/2	1/4	.010	50	4 Whe	els					
Pierce Arrow 845 ..	Stwrt	Mould	16	38	2 1/4	270		53	4 Whe	els					
Pierce Arrow 1245....	Stwrt	Mould	16	38	2 1/4	270		53	4 Whe	els					
Pierce Arrow 1255 .	Stwrt	Mould	16	38	2 1/4	270		53	4 Whe	els					
Plymouth 6	Lockhd	Mould	10	19 13/16	2	1/8	b	50	Trans	Ext	6	18 1/32	2	5/32	1/16
Pontiac Std. 6	Bendix	Mould	12	25 1/16	1 3/4	3/16	.010	50	Rear S	erv	ice				
Pontiac DL6	Bendix	Mould	12	25 1/16	1 3/4	3/16	.010	50	Rear S	erv	ice				
Pontiac 8	Bendix	Mould	12	25 1/16	1 3/4	3/16	.010	50	Rear S	erv	ice				
Reo 6A	Midlnd	Mould	11	28 1/4	1 3/4	210	.	50	Rear S	erv	ice				
Reo S	Lockhd	Mould	12	24 5/16	1 3/4	177	f	50	Trans	Ext	7	20 5/16	2 1/2	3/16	1/16
Studebaker Dict. 6.	Lockhd	Mould	11	23	1 3/4	1/4	b	45	Rear S	erv	ice				
Studebaker Com. 8..	Lockhd	Mould	12	25 3/8	1 3/4	1/4	b	45	Rear S	erv	ice				
Studebaker Pres. 8..	Lockhd	Mould	13	27 1/2	1 3/4	1/4	b	45	Rear S	erv	ice				
Stutz SV16	Lockhd	Mould	16	34	1 3/4	3/16	h	45	Trans	Ext	8	21 7/8	2	3/16	.003
Stutz DV32	Lockhd	Mould	16	34	1 3/4	3/16	h	45	Trans	Ext	8	21 7/8	2	3/16	.003
Terraplane 6	Bendix	Mould	9	19 3/16	1 3/4	3/16	c	50	4 Whe	els					
Willys 77.. .	Bendix	Mould	9	19 1/16	1 3/4	1/16	.010	55	4 Whe	els					

1934

MAKE AND MODEL	Foot brake: Make	Type Lining	Rear: Drum diameter	Rear Lining: Length per wheel	Width	Thickness	Clearance	Per cent braking on rear	Hand brake: Lining: Length per drum	Width	Thickness	Clearance
Auburn Std 6-52	Bendix	Mould	12	25 1/16	1 1/2	3/16	.010	50	Rea	r S	ervi	ce
Auburn Cust. 6-52	Bendix	Mould	12	25 1/16	1 1/2	3/16	.010	50	Rea	r S	ervi	ce
Auburn Std. 8-50	Bendix	Mould	12	25 1/16	2	1/16	.010	50	Rea	r S	ervi	ce
Auburn Cust. 850	Bendix	Mould	12	25 1/16	2	3/16	.010	50	Rea	r S	ervi	ce
Auburn 12-165 ..	Bendix	Mould	14	29 3/16	2	1/16	.010	50	Rea	r S	ervi	ce
Austin	Own	Wove	8	17	1 1/8	3/16		50	4 W	hee	ls	
Buick 34-50	Own	M&W	12	25 1/8	1 3/4	3/16		50	4 W	hee	ls	
Buick 34-60	Own	M&W	14	28 3/32	1 3/4	3/16		50	4 W	hee	ls	
Buick 34-90	Own	M&W	14	28 3/32	2 1/4	3/16		50	4 W	hee	ls	
Cadillac V8	Own	Wove	15	29 3/32	2	k	.007	40	Rea	r S	ervi	ce
Cadillac V12	Own	Wove	15	29 3/32	2	k	.007	40	Rea	r S	ervi	ce
Cadillac V16 ..	Own	Wove	15	29 3/32	2	k	.007	40	Rea	r S	ervi	ce
Chevrolet Std. 6, ,33	Own	Mould	10	15 1/4	1 1/2	3/16		50	4 W	hee	ls	
Chevrolet Mast. 6	Own	SMold	12	24 5/8	1 3/4	3/16		50	4 W	hee	ls	
Chrysler 6 .	Lockhd	Mould	11	22 5/32	2	3/16	a	50	18 1/32	2	1/32	1/16
Chrysler 8	Lockhd	Mould	12	22 13/16	2	1/4	a	50	18 1/4	2 1/2	1/4	1/16
Chrysler Imp. 8	Lockhd	Mould	13	24 3/32	2	1/4	a	50	18 1/4	2 1/2	1/4	1/16
Chrysler Imp. Cust. 8	Lockhd	Mould	15	30 1/4	2 1/2	1/4	a	50		2 3/8	1/4	1/16
Continental 4	Midlnd	Mould	9	23 1/4	1 3/4	1/32	.020	50	4 W	hee	ls	
DeSoto 6	Lockhd	Mould	11	22 5/32	2	3/16	a	50	18 1/4	2 1/2	1/4	1/16
Dodge 6	Lockhd	Mould	10	15 15/32	2	3/16	a	50	18 1/32	2	5/32	1/16
Duesenberg	Lockhd	Mould	15	38 3/4	2 1/4	1/4	.010	50	16 1/2	3	1/4	.025
Ford V8	Own	SMold	12	31	1 1/2	3/16	.010	60	Rea	r S	ervi	ce
Franklin Olym. 6 ..	Lockhd	Mould	12	20	1 3/4	17	f	50	20 1/2	2 1/2	3/16	1/32
Franklin Airman 6 ..	Lockhd	Mould	14	33 3/4	1 3/4	3/16	.006	50	22 1/2	2	1/32	1/32
Franklin V12	Lockhd	Mould	15	32 1/8	2 1/4	3/16	.	50	22 1/2	2	1/32	1/32
Graham 6.....	Lockhd	Wove		24	1 3/4	3/16	a	50	18 5/16	2	1/32	1/32
Graham 8	Lockhd	Wove	13	27 3/4	2	3/16	a	50	18 5/16	2	1/32	1/32
Graham Cust. 8.....	Lockhd	Wove	13	27 3/4	2	3/16	a	50	18 5/16	2	1/32	1/32
Hudson 8	Bendix	Mould	9	19 3/16	2 1/4	3/16	c	50	4 W	hee	ls	
Hupmobile 417 ..	Midlnd	Mould	11	28 5/8	1 3/4	3/16		50	4 W	hee	ls	
Hupmobile 421, 412A	Midlnd	Mould	12	33 3/16	2	21	1/16	50	4 W	hee	ls	
Hupmobile 421J .	Midlnd	Mould	12	33 3/16	1 13/32	21	1/16	50	4 W	hee	ls	
Hupmobile 422	Midlnd	Mould	14	36 5/16	2	21	1/16	50	4 W	hee	ls	
Hupmobile 426	Midlnd	Mould	14	36 5/16	2	21	1/16	50	4 W	hee	ls	
Hupmobile 427 . ..	Midlnd	Mould	14	36 5/16	2	21	1/16	50	4 W	hee	ls	
Lafayette Nash Blt.	Bendix	Mould	11	23 3/4	1 3/4			50	4 W	hee	ls	
LaSalle 8	Bendix	Mould	12	25 7/8	1 3/4	3/16		50	4 Re	ar S	ervi	ce
Lincoln V12-136, 145.	Bendix	M&W	16	34	2 1/2	1/4	c	50	4 W	hee	ls	
Nash Big 6	Bendix	Mould	11	23 3/4	1 3/4			50	4 W	hee	ls	
Nash Adv. 8	Bendix	Mould	11	23 1/16	2 1/4			50	4 W	hee	ls	
Nash Amb. 8.....	Bendix	Mould	14	29 7/16	2 1/4			50	4 W	hee	ls	
Oldsmobile 6	Bendix	Mould	11	23 3/4	1 3/4	5/32	b	50	Rear	Se	rvic	e
Oldsmobile 8.....	Bendix	Mould	12	25 1/32	1 3/4	3/16	b	50	Rear	Se	rvic	e
Packard 8	Bendix	M&SM	14	30 1/4	2 1/4	1/4	.010	50	4 W	hee	ls	
Packard Super 8 ...	Bendix	M&SM	14	30 1/4	2 1/4	1/4	.010	50	4 W	hee	ls	
Packard 12 . .	Bendix	M&SM	15	32 1/4	2 1/2	1/4	.010	50	4 W	hee	ls	
Pierce Arrow 840A.	Stwrt	Mould	16	38	2 1/4	27		53	4 W	hee	ls	
Pierce Arrow 1240A..	Stwrt	Mould	16	38	2 1/4	27		53	4 W	hee	ls	
Pierce Arrow 1248A.	Stwrt	Mould	16	38	2 1/4	27		53	4 W	hee	ls	
Plymouth 6 . .	Lockhd	Mould	10	15 3/32	1 1/2	1/8	a	50	18 13/32	2	5/32	1/16
Pontiac 8	Bendix	Mould	12	26	1 3/4	3/16		50	4 W	hee	ls	
Reo S6	Lockhd	Mould	12	24	1 3/4	17	f	50	20 1/2	2 1/2	3/16	1/32
Reo Royale 8... . .	Lockhd	Mould	15	31 1/8	2 1/4	19	f	50	20 1/2	2 1/2	3/16	1/32
Studebaker Dict. 6.	Midlnd	Mould	11 1/8	29 1/16	1 1/2	1/4	.010	50	4 W	hee	ls	
Studebaker Com. 8	Bendix	Mould	12 1/8	26 7/8	1 1/2	1/4	.010	52	4 W	hee	ls	
Studebaker Pres. 8.	Bendix	Mould	13 1/8	28	1 3/4	1/4	.010	52	4 W	hee	ls	
Stutz SV16	Lockhd	Mould	16	38	1 3/4	3/16	h	50	21 7/8	2	3/16	.003
Stutz DV32	Lockhd	Mould	16	38	1 3/4	3/16	h	50	21 7/8	2	3/16	.003
Terraplane 6	Bendix	Mould	9	19 3/16	1 3/4	1/16	c	50	4 W	hee	ls	

a — .006 heel, .012 toe
b — .005 heel, .015 toe
c — fixed
e — .010 heel, .012 toe
Ext — External
h — .005 heel,.008 toe
k — .245" forwarb shoe, 183" reverse snoe
Lockhd — Lockheed hydraulic
M&SM — Moulded and semi-moulded
M&W — Moulded and woven
Midlnd — Midland Steel Products Co.
SMold — Semi-moulded
Stwrt — Stewart Warner Corp.
Trans — Transmission
Wove — Woven

Brakes

1933

MAKE AND MODEL	Foot brake: Make	Type Lining	Rear: Drum diameter	Rear Lining: Length per wheel	Width	Thickness	Clearance	Per cent braking on rear	Hand brake Lining: Length per drum	Width	Thickness	Clearance
Auburn 8-101	Midlnd	Mould	13	33¾	1¾	7/32	010	50	4 Wh	eels		
Auburn 8-105	Lockhd	Mould	13	33¾	1¾	3/16	010	50	R Wh	eels		
Auburn 12-161	Lockhd	Mould	14	29⅜	2	3/16	010	50	R Wh	eels		
Auburn 12-165	Lockhd	Mould	14	29⅜	2	3/16	010	50	R Wh	eels		
Austin	Own	Wove	8	17	1⅛	1/16		50	4 Wh	eels		
Buick 33-50	Own	Mould	12	18 3/32	1¾	3/16		50	4 Wh	eels		
Buick 33-60	Own	Mould	14	22 3/16	1¾	3/16		50	4 Wh	eels		
Buick 33-80	Own	Mould	15	23 1/4	2	3/16		50	4 Wh	eels		
Buick 33-90	Own	Mould	15	23 1/4	2	3/16		50	4 Wh	eels		
Cadillac V8	Own	SMold	15	29¾	2	3/16	007	40	R Wh	eels		
Cadillac V12	Own	SMold	15	29¾	2	3/16	007	40	R Wh	eels		
Cadillac V16	Own	SMold	16	31⅝	2¼	3/16	007		R Wh	eels		
Chevrolet	Own	Mould	12	18 13/32	1¾	1/4		50	4 Wh	eels		
Chrysler 6	Lockhd	Mould	11	20 7/32	1½	3/16	a	50	21 13/32	3	5/32	1/16
Chrysler Royal 8	Lockhd	Mould	12	21 3/32	1¾	3/16	a	50	21 13/32	2	5/32	1/16
Chrysler Imp 8	Lockhd	Mould	13	23 5/16	2	3/16	a	50	21 13/32	2	5/32	1/16
Chrysler Imp Cst 8	Lockhd	Mould	15	28 3/32	2	3/16	a	50	24 5/16	2	5/32	1/16
Continental 4	Midlnd	Mould	9	23	1¾	3/16	025	50	4 Wh	eels		
Continental Light 6	Midlnd	Mould	9	23	1¾	3/16	025	50	4 Wh	eels		
Continental Big 6	Midlnd	Mould	11	29 5/16	1½	3/16	025	50	4 Wh	eels		
Cord	Lockhd	Mould	15	28¼	1¾	3/16	006	40	R Wh	eels		
Cunningham	Bendix	Mould	16	35	2½	¼	008	60	4 Wh	eels		
DeSoto 6	Lockhd	Mould	11	20 7/32	1½	3/16	a	50	21 13/32	2	5/32	1/16
Dodge 6	Lockhd	Mould	10	18 5/16	1½	3/16	a	50	18 13/32	2	5/32	1/16
Dodge 8	Lockhd	Mould	13	23 5/16	2	3/16	a	50	21 13/32	2	5/32	1/16
Duesenberg	Lockhd	Mould	15	28¾	2¼	¼	010		16½	3	¼	025
Essex Terraplane 6	Bendix	Mould	9	19	1¾	3/16	n	50	4 Wh	eels		
Essex Terraplane 8	Bendix	Mould	9	19	2¼	3/16	n	50	4 Wh	eels		
Ford B	Own	SMold	12	31	1½	3/16	010	60	4 Wh	eels		
Ford V8	Own	SMold	12	31	1½	3/16	010	60	4 Wh	eels		
Franklin Olym	Lockhd	Mould	12	20	1¾	177	f	50	20½	2½	5/16	1/32
Franklin 6	Lockhd	Mould	14	33⅝	1¾	3/16	006	50	22½	2	5/32	1/32
Franklin 12	Lockhd	Mould	15	32½	2¼	3/16		50	22½	2	5/32	1/32
Graham Std 6	Lockhd	Woven	13	27¾	1¾	3/16	a	50	18 5/16	2	5/32	1/32
Graham Std Cust 8	Lockhd	Woven	13	27¾	2	3/16	a	50	18 5/16	2	5/32	1/32
Hudson Super 6	Bendix	Mould	11	21	1¾	3/32	n	50	4 Wh	eels		
Hudson 8	Bendix	Mould	13	25	1¾	7/32	n	50	4 Wh	eels		
Hupmobile 321	Midlnd	Mould	12	33 3/16	2	210	1/16	50	4 Wh	eels		
Hupmobile 322	Midlnd	Mould	14	36 5/16	2	210	1/16	50	4 Wh	eels		
Hupmobile 326	Midlnd	Mould	14	36 5/16	2	210	1/16	50	4 Wh	eels		
LaSalle	Own	SMold	15	29¾	2	3/16	007	40	R Wh	eels		
Lincoln V8	Bendix	M&W	16	34	2½	¼	n	50	4 Wh	eels		
Lincoln V12	Bendix	M&W	16	34	2½	¼	n	50	4 Wh	eels		
Marmon 16	Bendix	Mould	16	35⅝	2½	¼	m	50	4 Wh	eels		
Nash Big 6	Midlnd	Mould	11	29 5/16	1½	3/16	015	50	4 Wh	eels		
Nash Std 8	Midlnd	Mould	11	29 5/16	1½	3/16	015	50	4 Wh	eels		
Nash Spc 8	Midlnd	Mould	13	33¾	1 33/64	13/64	015	50	4 Wh	eels		
Nash Adv 8	Bendix	Mould	13	27½	2	13/64	a	50	4 Wh	eels		
Nash Amb 8	Bendix	Mould	16	33¾	2	3/16	a	50	4 Wh	eels		
Oldsmobile 6	Bendix	Mould	12	25 23/32	1¾	3/16	010	50	4 Wh	eels		
Oldsmobile 8	Bendix	Mould	12	25 23/32	1¾	3/16	010	50	4 Wh	eels		
Packard 8	Bendix	M&SM	14	34¼	1¾	¼	010	50	4 Wh	eels		
Packard Super 8	Bendix	M&SM	14	34¼	1¾	¼	010	50	4 Wh	eels		
Packard 12	Bendix	M&SM	15	37⅞	1⅞	¼	010	50	4 Wh	eels		
Pierce Arrow 836	Stewart	Mould	16	38	2¼	270		50	4 Wh	eels		
Pierce Arrow 1236	Stewart	Mould	16	38	2¼	270		50	4 Wh	eels		
Pierce Arrow 1242, 47	Stewart	Mould	16	38	2¼	270		53	4 Wh	eels		
Plymouth 6	Lockhd	Mould	10	18 5/16	1½	3/16	a	50	18 13/32	2	5/32	1/16
Pontiac 8	Own	Mould	12	18¼	1¾	3/16		50	4 Wh	eels		
Reo S	Lockhd	Mould	12	24	1¾	177	f	50	20½	2½	5/16	1/32
Reo Royale	Lockhd	Mould	15	31⅛	2¼	192	f	50	20½	2½	5/16	1/32
Rockne Six	Bendix	Mould	11	23 13/32	1½	5/32	p	50	4 Wh	eels		
Studebaker 6	Bendix	Mould	12⅛	26 3/16	1½	¼	008	52	4 Wh	eels		
Studebaker Com 8	Bendix	Mould	12⅛	26 3/16	1½	¼	008	52	4 Wh	eels		
Studebaker Pres 8	Bendix	Mould	13⅛	28	1¾	¼	008	52	4 Wh	eels		
Studebaker Spd Pres 8	Bendix	Mould	15⅛	32 5/16	2¼	¼	008	52	4 Wh	eels		
Stutz LAA	Lockhd	Mould	14	36½	1¾	7/16	r	50	20	2¼	⅛	004
Stutz SV16, DV32	Lockhd	Mould	16	38	1¾	3/16	h	45	21⅞	2	3/16	003
Willys 77	Bendix	Mould	9	19 3/16	1¾	3/16	010	55	4 Wh	eels		
Willys 99	Bendix	Mould	12	25 11/16	1½	3/16	010	55	4 Wh	eels		

1932

MAKE AND MODEL	Foot brake: Make	Type Lining	Rear: Drum diameter	Rear Lining: Length per wheel	Width	Thickness	Clearance	Per cent braking on rear	Hand brake Lining: Length per drum	Width	Thickness	Clearance
Auburn 8-100	Midlnd	Mould	13	33¾	1¾	205	040	50	4 Wh	eels		
Auburn 12-160	Lockhd	Mould	14	29⅜	2	3/16	010	50	Rear	Serv	ice	
Austin	Own	Wove	8	17	1⅛	1/16		50	4 Wh	eels		
Buick 32-50	Own	M&W	12	19 7/32	1¾	3/16	012	50	4 Wh	eels		
Buick 32-60	Own	M&W	14	22 3/16	1¾	3/16	012	50	4 Wh	eels		
Buick 32-80	Own	M&W	15	23 43/64	2	3/16	012	50	4 Wh	eels		
Buick 32-90	Own	M&W	15	23 43/64	2	3/16	012	50	4 Wh	eels		
Cadillac V8	Own	SMold	15	29¾	2	3/16		40	Rear	Serv	ice	
Cadillac V12	Own	SMold	15	29¾	2	3/16		40	Rear	Serv	ice	
Cadillac V16	Own	SMold	16	31⅝	2¼	3/16			Rear	Serv	ice	
Chevrolet	Own	Mould	11½	16 13/32	1½	3/16	7/32	50	7¾	1¾	3/16	
Chrysler 6	Lockhd	Mould	12	21 3/32	1¾	3/16	a	50	21 13/32	2	5/32	1/16
Chrysler 8	Lockhd	Mould	13	23	2	3/16	a	50	23½	2	5/32	1/16
Chrysler Imp Cst 8	Lockhd	Mould	15	28 3/32	2	3/16	a	50	24⅝	2	5/32	1/16
Cord 8	Lockhd	Mould	15	28¼	1¾	3/16	006	40	Rear	Serv	ice	
Cunningham	Bendix	Mould	16	35	2½	¼	008	60	4 Wh	eels		
DeSoto 6	Lockhd	Mould	11	20 7/32	2	3/16	a	50	21 13/32	2	5/32	
DeVaux 6-75	Midlnd	Mould	11	29 1/16	1½	1/16	1/4	80	4 Wh	eels		
Dodge 6	Lockhd	Mould	12	21 3/32	1¾	3/16	a	50	21 13/32	2	5/32	1/16
Dodge 8	Lockhd	Mould	13	23 5/16	2	3/16	a	50	21 13/32	2	5/32	1/16
Duesenberg	Lockhd	Mould	15	28¾	2¼	¼	010		16½	3	¼	025
Durant 6-19	Midlnd	Mould	13	38¼	1¾	1/16	1/8	4	Wh	eels		
Essex	Bendix	Mould	11	21	1¾	5/32	c	50	4 Wh	eels		
Ford A	Own	Wove	11	28	1½	3/16	020	60	28¾	1	1/16	020
Franklin	Lockhd	Mould	14	33⅜	1¾	3/16	006	50	22½	2	5/32	1/32
Graham 6	Lockhd	Mould	12	21 13/32	1¾	3/16	a	50	18 5/16	2	5/32	
Graham 8	Lockhd	Mould	13	27¾	2	3/16	a	50	18 3/32	2	5/32	
Hudson 8	Bendix	Mould	13	25	1¾	3/32	c	50	4 Wh	eels		
Hupmobile 214	Midlnd	Mould	12	36	2	3/16	1/16	50	4 Wh	eels		
Hupmobile 216	Midlnd	Mould	12	33 3/16	2	020	1/16	50	4 Wh	eels		
Hupmobile 218	Midlnd	Mould	12	36	2	3/16	1/16	50	4 Wh	eels		
Hupmobile 221	Midlnd	Mould	13⅝	41	2	3/16	1/16	50	4 Wh	eels		
Hupmobile 222	Midlnd	Mould	14	36 5/16	2	210	1/16	50	4 Wh	eels		
Hupmobile 225, 237	Midlnd	Mould	15	39⅜	2	210	1/16	50	4 Wh	eels		
Hupmobile 226	Midlnd	Mould	14	36 5/16	2	210	1/16	50	4 Wh	eels		
LaSalle	Own	SMold	15	29¾	2	3/16		40	Rear	Serv	ice	
Lincoln 12	Bendix	M&W	16	34	2½	¼	c	51	4 Wh	eels		
Marmon 8-125	Bendix	Mould	14	30½	2	3/16	c	50	4 Wh	eels		
Marmon 16	Bendix	Mould	16	35⅝	2½	¼	c	50	4 Wh	eels		
Nash 960	Midlnd	Mould	12	31½	1 33/64	1/4	1/16	50	4 Wh	eels		
Nash 970	Midlnd	Mould	12	31⅛	1 7/64	13/64	1/16	05	4 Wh	eels		
Nash 980	Midlnd	Mould	13	33¾	1 33/64	13/64	1/16	50	4 Wh	eels		
Nash 990	Bendix	Mould	16	33¾	2	3/16		50	4 Wh	eels		
Oldsmobile 6	Bendix	Mould	12	25 5/16	1¾	3/16	b	50	4 Wh	eels		
Oldsmobile 8	Bendix	Mould	12	25 5/16	1¾	3/16	b	50	4 Wh	eels		
Packard 901	Bendix	M&SM	16	45 7/32	1¾	3/16		50	Rear	Serv	ice	
Packard 902	Bendix	M&SM	16	45 7/32	1¾	3/16		05	Rear	Serv	ice	
Packard 903	Bendix	M&SM	16	45 7/32	2	3/16		50	Rear	Serv	ice	
Packard 904	Bendix	M&SM	16	45 7/32	2	3/16	f	50	Rear	Serv	ice	
Peerless Mst Cust 8	Bendix	Mould	14	35¼	2	3/16	c	50	4 Wh	eels		
Pierce Arrow 54	Bendix	Mould	16	32⅝	2¼	¼		50	4 Wh	eels		
Pierce Arrow 53	Bendix	Mould	16	32⅝	2¼	¼		50	4 Wh	eels		
Pierce Arrow 52, 51	Bendix	Mould	16	32⅝	2¼	¼		50	4 Wh	eels		
Plymouth	Lockhd	Mould	11	20 7/32	1½		a	50	18 13/32	2	5/32	1/16
Pontiac 6	Bendix	Mould	12	26	1¾	3/16	c	60	4 Wh	eels		
Pontiac 8	Bendix	Mould	13	27⅞	1¾	3/16	c	60	4 Wh	eels		
Reo 6-21	Lockhd	Mould	14	25 5/16	1¾	177	f	50	20½	2½	5/16	1/32
Reo 8-21, 25	Lockhd	Mould	14	25 5/16	1¾	177	f	50	20½	2½	3/16	1/32
Reo 31, 35	Lockhd	Mould	15	31½	2¼	3/16	f	50	20½	2½	3/16	1/32
Rockne Six 65	Bendix	Mould	11	23 13/32	1½	5/32	d	50	4 Wh	eels		
Rockne Six 75	Bendix	Mould	12	23 13/32	1½	3/16	d	50	4 Wh	eels		
Studebaker 6	Bendix	Mould	12	24 1/16	1½	¼	d	50	4 Wh	eels		
Studebaker Com 8	Bendix	Mould	12	24½	1½	¼	e	45	4 Wh	eels		
Studebaker Pres 8	Bendix	Mould	13	26½	1¾	¼	e	45	4 Wh	eels		
Studebaker Pres 8	Bendix	Mould	15	30¾	2¼	¼		04	4 Wh	eels		
Stutz LAA	Lockhd	Mould	14	36½	1¾	3/16	g	50	20	2¼	⅛	004
Stutz SV16, DV32	Lockhd	Mould	16	38	1¾	3/16	h	45	21⅞	2	3/16	003
Willys Overland 6-90	Bendix	Mould	12	25 1/16	1½	3/16	m	55	4 Wh	eels		
Willys Overland 8-88	Bendix	Mould	13	27 1/16	1¾	3/16	m	55	4 Wh	eels		
Willys Knight 95	Bendix	Mould	12	25 1/16	1½	3/16	m	55	4 Wh	eels		
Willys Knight 66D	Bendix	Mould	13	27 1/16	1¾	3/16	m	55	4 Wh	eels		

a — 006 heel, 012 toe
b — 005 heel, 015 toe
c — 008 anchor, 012 float
d — 006 heel, 015 toe
e — 010 heel, 016 toe
f — 010 heel, 012 toe
g — 008" anchor, 012" float
h — 005" heel, 008" toe
Lockhd — Lockheed hydraulic
m — 008" heel, 014" toe
M & SM — Moulded and semi-moulded
M & W — Moulded and woven
Mould — Moulded
Midlnd — Midland Steeldraulic
n — 008" toe, 014" heel
p — 008" toe, 015" heel
r — 006" heel, 010" toe
SMold — Semi-moulded
Wve — Woven

Index of Interchangeable Parts

DIRECTIONS—Use this index to determine the interchangeable part number For example, suppose you wish to know what cars have generator armatures interchangeable with the Auburn 76 Looking up this model on *this* page, you will find that the interchangeable part number for this generator armature is G13 Also note that at the top of the generator armature column it says, "Turn to page 80" Under G13 on page 674 you will find listed all the models using this particular generator armature

A single series of interchangeable part numbers is used throughout the bearing pages For example, the B67 Bevel Pinion Shaft Rear Bearings on page 102 are interchangeable with the B67 Differential Bearings on page 104, as well as with the B67 Rear Wheel Bearings on page 106 Therefore, if trouble is experienced in locating a given bearing in stock, it is advisable to look for its number throughout the bearing pages

MAKE AND MODEL	Year	Generator Armature	Starting Motor Armature	Connecting Rod	Rear Axle Shaft	Bevel Gear and Pinion	Clutch Plate	Transmission	Engine	Bearings							
										Clutch Throwout	Clutch Shaft	Rear Axle			Wheels		
												Bevel Pinion Shaft Front	Bevel Pinion Shaft Rear	Differential	Rear	Front Inner	Front Outer
Turn t page ⟶		**80**	**82**	**84**	**86**	**88**	**90**	**92**	**94**	**96**	**98**	**100**	**102**	**104**	**106**	**108**	**110**
Auburn, 76	1928	G13	S7	R17L-R	A19	P133	C143	TR44	E2	B111	B54	T109-105	T127-126	T18-19	T231-223	T227-223	T216-218
Auburn, 88	1928	G13	S7	R17L-R	A20	P41	C47	TR46	E5	B111	B56	T109-105	T10-12	T26-24	T231-223	T227-223	T216-218
Auburn, 115	1928	G1	S2	R18L-R	A20	P131	C47	TR47	E10	B110	B56	T109-105	T15-12	T21-24	T170-12	T15-12	T100-11
Auburn, 6-80	1929	G13	S7	R17L-R	A21	P133	C15	TR48	E2	B111	B54	T109-105	T131-126	T13-14	T231-223	T227-223	T216-218
Auburn, 8-90	1929	G13	S7	R17L-R	A21	P132	C45	TR46	E5	B110	B56	T109-105	T131-126	T13-14	T231-223	T227-223	T216-218
Auburn, 120	1929	G1	S2	R38L-R	A24	P131	C147	TR49	E10	B110	B55	T109-105	T15-12	T27-24	T131-128	T15-12	T100-11
Auburn, 6-85	1930	G13	S7	R114L-R	A28	P134	C33	TR48	E3	B111	B54	T109-105	T10-12	T26-25	T231-223	T227-223	T216-218
Auburn, 8-95	1930	G13	S7	R114L-R	A29	P132	C35	TR46	E6	B129	B56	T109-105	T10-12	T26-25	T231-223	T227-223	T216-218
Auburn, 125	1930	G1	S2	R38L-R	A16	P131	C147	TR49	E11	B110	B55	T109-105	T15-12	T27-24	T131-128	T15-12	T100-11
Auburn, 8-98	1931	G13	S7	R11L-R	A29	P156	C156	TR50	E7	B129	B154	T109-105	T15-12	T17-14	T240-238	T227-223	T216-218
Auburn, 8-100	1932	G13	S7	R11L-R	A29	P156	C165	TR1	E7	B129	B154	T109-105	T179-180	T17-14	T172-12	T115-107	T90-92
Auburn, 12-160	1932	G79	S35	R162	P156	C95	C95	TR52	E14	B129	B175	T184-174	T196-37	T303	T60-61	T161-12	T121-120
Auburn, 8-101	1933	G13	S17	R1L-R	A81	P182	C165	TR1	E7	B110	B154	T154-142	T179-174	T305	T172-164	T115-107	T90-92
Auburn, 8-105	1933	G13	S17	R1L-R	A81	P187	C165	TR1	E7	B110	B154	T154-142	T179-174	T305	T172-164	T115-107	T90-92
Auburn, 12-161	1933	G79	S35	R162	A87	P189	C165	TR2	E14	B129	B173	T184-174	T196-37	T303	T60-61	T161-12	T121-120
Auburn, 12-165	1933	G79	S35	R162	A87	P190	C165	TR2	E14	B129	B173	T184-174	T196-37	T303	T60-61	T161-12	T121-120
Auburn Std 6-52X	1934	G166	S54	R1L-R	A81	P228	C181	TR19	E269	B110	B173	T154-142	T270-271	T17-15	T137-128	T228-223	T216-219
Auburn Cust 6-52Y	1934	G166	S54	R1L-R	A81	P228	C181	TR19	E269	B110	B173	T154-142	T314-315	T303	T316-12	T228-223	T216-219
Auburn Std 8-50X	1934	G166	S54	R1L-R	A81	P229	C165	TR20	E270	B110	B173	T312-313	T179-180	T303	T161-12	T115-107	T90-92
Auburn Cust 8-50Y	1934	G166	S54	R1L-R	A81	P187	C165	TR20	E271	B110	B173	T154-142	T314-315	T303	T161-12	T115-107	T90-92
Austin, A	1931	G134	S64	R117	A3	P159	C1	TR53	E57	B136	B53	B132	B132	T232-226	T97-94	T214-215	T212-213
Austin, A	1932	G134	S64	R117	A3	P159	C1	TR53	E57	B136	B53	B132	B133	T232-226	T97-94	T214-215	T212-213
Austin, A	1933	G9	S64	R117	A3	P159	C1	TR53	E57	B136	B53	B132	B134	T232-226	T97-94	T214-215	T212-213
Austin	1934	G9	S64	R117	A3	P159	C1	TR53	E57	B136	B53	B132	B134	T232-226	T97-94	T214-215	T212-213
Blackhawk, L6	1929	G21	S9	R53	A162	P153	C38	TR54	E58	B110	B57	B39	B65	T47-49	T288-19	T115-116	T96-94
Blackhawk, L8	1929	G38	S7	R202	A162	P173	C38	TR54	E47	B110	B57	B39	B65	T47-49	T288-19	T115-116	T96-289
Blackhawk, L6	1930	G21	S9	R53	A162	P173	C38	TR54	E58	B110	B57	B39	B65	T47-49	T18-19	T115-107	T96-94
Blackhawk, L8	1930	G38	S7	R202	A162	P173	C38	TR54	E47	B110	B57	B39	B65	T47-49	T18-19	T115-107	T96-94
Buick, 115	1928	G14	S8	R181	A4	P21	C3	TR55	E59	B120	B56	B140	B66	B47	B208	B185	B184
Buick, 120	1928	G14	S8	R179	A114	P43	C3	TR56	E60	B120	B57	B141	B67	B48	B67	B187	B186
Buick, 128	1928	G14	S8	R179	A114	P44	C3	TR56	E60	B120	B57	B141	B67	B48	B67	B187	B186
Buick, 116	1929	G31	S8	R182	A116	P95	C3	TR55	E61	B120	B56	B140	B66	B47	B209	B191	B190
Buick, 121	1929	G31	S8	R180	A6	P87	C130	TR56	E62	B120	B57	B141	B67	B48	B210	B195	B194
Buick, 129	1929	G31	S8	R180	A6	P87	C130	TR56	E62	B120	B57	B141	B67	B48	B210	B195	B194
Buick, 40	1930	G31	S8	R182	A116	P100	C130	TR57	E63	B120	B88	B124	B66	B47	B209	B191	B190
Buick, 50	1930	G31	S8	R180	A116	P101	C54	TR58	E64	B120	B88	B141	B67	B48	B210	B195	B194
Buick, 80	1930	G31	S8	R180	A6	P101	C53	TR58	E64	B120	B88	B141	B67	B48	B210	B195	B194
Buick, 8-50	1931	G69	S13	R118L-R	A7	P89	C54	TR59	E65	B100	B88	B140	B65	B42	B211	B191	B190
Buick, 8-60	1931	G60	S8	R119L-R	A73	P102	C53	TR60	E66	B120	B88	B124	B66	B47	B209	B191	B190
Buick, 8-80	1931	G69	S8	R120L-R	A6	P101	C52	TR61	E67	B120	B88	B141	B67	B43	B210	B195	B194
Buick, 8-90	1931	G69	S8	R120L-R	A6	P103	C52	TR61	E67	B120	B88	B141	B67	B43	B210	B195	B194
Buick 32-50	1932	G69	S13	R118L-R	A8	P89	C54	TR4	E68	B102	B154	B140	B65	B42	B211	B193	B192
Buick, 32-60	1932	G69	S8	R119L-R	A73	P100	C53	TR5	E66	B104	B154	B141	B66	B47	B209	B193	B192
Buick, 32-80	1932	G69	S8	R120L-R	A6	P101	C52	TR61	E67	B104	B155	B141	B67	B43	B210	B195	B194
Buick, 32-90	1932	G69	S8	R120L-R	A6	P103	C52	TR61	E67	B104	B155	B141	B67	B43	B211	B195	B194
Buick, 33-50	1933	G16	S13	R10L-R	A91	P150	C54	TR4	E68	B102	B154	B140	B65	B42	B218	B193	B192
Buick, 33-60	1933	G16	S8	R11L-R	A93	P191	C53	TR5	E66	B104	B154	B141	B66	B47	B209	B193	B192
Buick, 33-80	1933	G16	S8	R15L-R	A95	P192	C52	TR6	E67	B104	B155	B141	B67	B43	B210	B195	B194
Buick, 33-90	1933	G16	S8	R15L-R	A95	P193	C52	TR6	E67	B104	B155	B141	B67	B43	B210	B195	B194
Buick 34-40	1934	G162	S13	R242	A195	P150	C	TR249	E272	B102	B152	B225	B51	B42	B217	B183	B182
Buick 34-50	1934	G160	S13	R10L-R	A91	P230	C54	TR249	E273	B102	B152	B140	B65	B42	B218	B193	B192
Buick 34-60	1934	G160	S13	R11L-R	A93	P231	C53	TR250	E274	B104	B152	B141	B66	B43	B209	B193	B192
Buick 34-90	1934	G160	S13	R15L-R	A95	P193	C52	TR250	E67	B104	B152	B141	B67	B43	B210	B195	B194
Cadillac V8, 341A	1928	G57	S33	R183	A13R-L	P153	C58	TR63	E70	B24	B57	B143	B72	T74-73	T36-37	T54-55	T3-5
Cadillac V8, 341B	1929	G57	S33	R174	A13R-L	P153	C58	TR64	E70	B24	B28	B143	B72	T74-73	T36-37	T54-55	T3-5
Cadillac V8, 353	1930	G57	S7	R174	A14R-L	P154	C50	TR65	E71	B24	B28	B143	B72	T74-73	B105	B197	B196
Cadillac V16, 452	1930	G72	S35	R135	A14R-L	P77	C50	TR66	E74	B24	B28	B143	B72	T74-73	B105	B197	B196
Cadillac V8, 355A	1931	G57	S7	R134	A14R-L	P153	C50	TR66	E71	B24	B28	B142	B50	T43-42	B105	B197	B196
Cadillac V12, 370A	1931	G72	S35	R135	A14R-L	P153	C50	TR66	E73	B24	B28	B142	B50	T43-42	B105	B197	B196
Cadillac V16, 452A	1931	G72	S35	R135	A14R-L	P77	C50	TR66	E74	B24	B28	B143	B72	T74-73	B105	B197	B196
Cadillac V8, 355B	1932	G76	S7	R134	A15R-L	P153	C96	TR7	E72	B24	B177	B142	B67	T43-42	B106	B197	B196
Cadillac V12, 370B	1932	G75	S35	R135	A15R-L	P153	C96	TR7	E73	B24	B177	B142	B67	T43-42	B106	B197	B196
Cadillac V16, 452B	1932	G75	S35	R135	A15R-L	P153	C96	TR7	E74	B24	B177	B142	B67	T74-73	B106	B197	B196
Cadillac V8, 355C	1933	G76	S7	R134	A15R-L	P221	C96	TR7	E72	B24	B177	B142	B67	T43-42	B106	B197	B196
Cadillac V12, 370C	1933	G75	S35	R135	A15R-L	P222	C96	TR7	E73	B24	B177	B142	B67	T43-42	B106	B197	B196
Cadillac V16, 452C	1933	G75	S35	R135	A15R L	P223	C96	TR7	E74	B24	B177	B142	B67	T74-73	B106	B197	B196
Cadillac V8 355D	1934	G161	S7	R134	A15R L	P221	C182	TR7	E275	B104	B177	B142	B67	T43-42	B106	B197	B194
Cadillac V12 370D	1934	G161	S35	R135	A15R-L	P222	C183	TR7	E276	B104	B177	B142	B67	T43-42	B106	B197	B194
Cadillac V16, 452D	1934	G161	S35	R135	A15R-L	P223	C96	TR7	E277	B104	B177	B142	B67	T74-73	B106	B197	B194
Chandler, 65	1929	G17	S4	R184	A39	P25	C40	TR67	E78	B123	B54	T176-174	T68-64	T26-23	B67	T227-223	T216-218
Chandler, Big 6	1929	G15	S7	R161	A35	P25	C23	TR67	E83	B123	B65	T10-12	T67-64	T36-37	B67	T15-12	T100-11
Chandler, 75	1929	G108	S56	R188	A39	P25	C23	TR67	E84	B123	B55	T176-174	T68-64	T26-23	B67	T227-223	T216-218
Chandler, 85	1929	G22	S7	R187	A35	P25	C22	TR67	E85	B123	B65	T10-12	T67-64	T36-37	B67	T15-12	T100-11
Chevrolet 4, AA	1927	G4	S2	R189	A47	P26	C180	TR68	E86	B198	B63	B25	B64	B46	B64	B183	B182
Chevrolet 4, AB	1928	G4	S2	R189	A47	P26	C180	TR68	E86	B198	B54	B138	B64	B46	B64	B183	B182
Chevrolet 6, AC	1929	G4	S2	R190	A47	P64	C180	TR69	E87	B202	B54	B138	B64	B46	B64	B183	B182
Chevrolet 6, AD	1930	G4	S2	R190	A48	C17	C178	TR69	E88	B202	B54	B132	B64	B42	B64	B183	B182
Chevrolet 6, AE	1931	G4	S2	R190	A48	P90	C178	TR70	E88	B202	B54	B132	B64	B42	B64	B183	B182
Chevrolet 6, BA	1932	G4	S2	R152	A49	P90	C44	TR71	E89	B202	B87	B132	B64	B42	B64	B183	B182
Chevrolet Std 6, CC.	1933	G4	S2	R243	A113	P160	C125	TR8	E1	B203	B172	B125	B52	B44	B219	B189	B188
Chevrolet Mast 6, CA	1933	G4	S2	R20	A113	P161	C125	TR9	F16	B203	B87	B132	B51	B42	B217	B183	B182
Chevrolet Std 6 DC	1934	G4	S2	R243	A113	P160	C125	TR8	E278	B203	B172	B125	B52	B44	B219	B189	B188
Chevrlet Mast 6 DA	1934	G162	S110	R20	A113	P161	C125	TR9	E279	B203	B87	B134	B51	B42	B217	B183	B182

Index of Interchangeable Parts

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MAKE AND MODEL	Year	Generator Armature	Starting Motor Armature	Connecting Rod	Rear Axle Shaft	Bevel Gear and Pinion	Clutch Plate	Transmission	Engine	Bearings							
										Clutch Throwout	Clutch Shaft	Rear Axle			Wheels		
												Bevel Pinion Shaft Front	Bevel Pinion Shaft Rear	Differential	Rear	Front Inner	Front Outer
Turn t page ⟶		**80**	**82**	**84**	**86**	**88**	**90**	**92**	**94**	**96**	**98**	**100**	**102**	**104**	**106**	**108**	**110**
Chrysler, 52	1928	G12	S2	R191	A37	P27	C68	TR72	E90	B118	B53	T123-120	T132-126	T261-262	T137-126	T228-223	T216-218
Chrysler, 62	1928	G5	S2	R192	A38	P22	C29	TR76	E91	B114	B56	T146-142	T176-174	T35-32	T135-136	T228-230	T90-92
Chrysler, 72	1928	G5	S7	R195	A38	P51	C26	TR76	E94	B114	B56	T146-142	T176-174	T35-32	T135-136	T228-230	T90-92
Chrysler, 80L	1928	G24	S7	R173	A43R-L	P81	C43	TR77	E93	B117	B57	B141	B67	T35-32	B67	T165-159	T121-120
Chrysler, 65	1929	G4	S2	R193	A38	P50	C29	TR76	E95	B114	B56	T146-142	T176-174	T35-32	T237-239	T228-230	T90-92
Chrysler, 75	1929	G33	S7	R195	A41	P51	C26	TR76	E96	B114	B56	T146-142	T176-174	T35-32	T237-239	T228-230	T90-92
Chrysler, Imp. 6	1929	G24	S7	R173	A23R-L	P107	C43	TR77	E93	B114	B151	B141	B67	B67	T35-32	T165-159	T121-120
Chrysler, 66	1930	G4	S12	R85	A42	P107	C29	TR78	E97	B118	B56	T147-142	T147-142	T27-24	T232-226	T228-223	T216-218
Chrysler, 70	1930	G8	S12	R84	A44R-L	P108	C29	TR79	E98	B118	B151	T176-174	T176-174	T35-32	T16-14	T237-238	T90-92
Chrysler, 77	1930	G8	S7	R86	A44R-L	P109	C26	TR79	E98	B114	B151	T176-174	T176-174	T35-32	T16-14	T237-238	T90-920
Chrysler, Imp 6	1930	G24	S7	R197	A43R-L	P109	C43	TR77	E93	B114	B151	B141	B67	B67	T35-32	T165-159	T121-12
Chrysler, 6, CJ	1931	G86	S13	R136L-R	A42	P98	C19	TR72	E99	B119	B54	T147-143	T147-143	T17-14	T232-226	T228-223	T216-218
Chrysler, 66	1931	G8	S12	R84	A42	P98	C29	TR80	E97	B118	B56	T147-142	T147-142	T27-24	T232-226	T228-223	T216-218
Chrysler, 70	1931	G8	S7	R86	A44R-L	P110	C29	TR79	E98	B118	B151	T176-174	T176-174	T35-32	T16-14	T237-238	T90-92
Chrysler, 8 Std. CD	1930	G70	S7	R137	A55R L	P111	C153	TR81	E101	B119	B147	B96	B96	T27-24	T237-239	T115-107	T90-92
Chrysler, 8CD	1931	G70	S7	R137	A55R-L	P111	C30	TW81	E267	B119	B147	B96	B96	T27-24	T237-239	T115-107	T90-92
Chrysler, Imp 8, CG	1931	G73	S7	R144L-R	A18	P110	C56	TR82	E102	B114	B148	T176-174	T176-174	T35-32	T16-14	T135-128	T96-94
Chrysler 6, CM ..	1931	G70	S13	R136L-R	A42	P98	C19	TR72	E99	B119	B148	T147-143	T147-143	T17-14	T232-226	T228-223	T216-218
Chrysler, 6, CJ	1932	G70	S13	R165R L	A17	P93	C157	TR83	E100	B102	B174	T147-142	T147-142	T27-24	T232-226	T228-223	T216-218
Chrysler, 8 CP	1932	G70	S7	R166L-R	A55R-L	P129	C159	TR84	E103	B102	B146	B96	B96	T27-24	T237-239	T115-107	T90-92
Chrysler, Imp 8, CH	1932	G73	S7	R229	A45R L	P110	C161	TR85	E102	B102	B150	T176-174	T176-174	T35-32	T16-14	T135-128	T96-94
Chrysler Imp Cust 8, CL	1932	G73	S7	R229	A45R-L	P111	C161	TR85	E102	B102	B150	T176-174	T176-174	T35-32	T16-14	T135-128	T96-94
Chrysler 6 CO	1933	G70	S13	R165L-R	A118	P164	C157	TR10	E100	B102	B174	T147-142	T270-271	T268-269	T232-226	T228-223	T216-218
Chrysler Royal, 8, CT	1933	G70	S13	R166L-R	A119	P194	C171	TR10	E17	B102	B174	B96	B97	T27-24	T237-239	T115-107	T90-92
Chrysler Imp , 8, CQ	1933	G70	S13	R166L-R	A46R L	P194	C171	TR10	E103	B102	B174	T176-174	T176-174	T35-32	T16-14	T135-128	T96-94
Chrysler Imp Cust 8 CL	1933	G73	S7	R227	A18	P197	C161	TR10	E102	B102	B176	T176-174	T176-174	T35-32	T16-14	T135-128	T96-94
Chrysler 6 CA	1934	G162	S13	R244L-R	A118	P232	C184	TR10	E280	B102	B173	T146-142	T270-271	T268-269	T232-226	T235-234	T216-218
Chrysler 8 CU	1934	G162	S13	R245L-R	A119	P233	C186	TR10	E281	B102	B174	T175-174	T314-315	T31-32	T237-239	T135-128	T317-318
Chrysler Imp 8, CV	1934	G162	S13	R245L-R	A46R L	P234	C185	TR251	E282	B102	B174	T175-174	T314 315	T31-32	T237-239	T135-128	T317-318
Chrysler Imp Cust 8 CX	1934	G162	S13	R245L-R	A46R-L	P234	C185	TR251	E282	B102	B176	T175-174	T314-315	T31-32	T237-239	T135-128	T317-318
Continntal Beacon C400	1933	G19	S18	R240L-R	A185	P163	C174	TR11	E18	B108	B167	T102-103	T138-139	T232-226	T110-107	T235-234	T216-219
Continental Flyer C600	1933	G19	S18	R241L-R	A185	P163	C176	TR11	E20	B108	B167	T102-103	T147-142	T240-239	T110-107	T235-234	T216-219
Continental Ace, 41A	1933	G120	S44	R103L-R	A186	P203	C176	TR12	E55	B102	B164	T154-143	T147-142	T18-14	T134-128	T228-223	T216-218
Continental 4-41	1934	G120	S44	R103L R	A186	P203	C176	TR12	E55	B102	B164	T154-143	T147-142	T18-14	T134-128	T228-223	T216-218
Cord, 8 L29	1930	G6	S7	R38L-R			C28	TR86	E8	B129	B149	B143	B57	T27-23	T307	T46-48	T43-42
Cord, 8, L-30	1931	G6	S7	R38L-R			C28	TR87	E8	B129	B149	B143	B57	T27-23	T307	T46-48	T43-42
Cord, 8, L-30 .	1932	G6	S7	R38L-R			C28	TR87	E8	B129	B149	B143	B57	T27-23	T308	T46-48	T43-42
DeSoto, 6, K	1929	G4	S2	R210	A42	P98	C98	TR72	E140	B118	B54	T154-143	T147-142	T261-262	T232-226	T228-223	T216-218
DeSoto, 6, CK	1930	G4	S2	R210	A42	P98	C19	TR88	E106	B11	B148	T147-142	T147-142	T27-24	T232-226	T228-223	T216-218
DeSoto, 8, CF	1930	G70	S13	R107	A42	P97	C19	TR89	E107	B118	B148	T147-142	T147-142	T27-24	T232-226	T228-223	T216-218
DeSoto, 6, SA	1931	G70	S13	R136L-R	A42	P149	C107	TR83	E108	B119	B148	T147-142	T147-142	T17-14	T232-226	T228-223	T216-218
DeSoto, 8, CF	1931	G70	S13	R100	A42	P93	C19	TR88	E109	B102	B174	T147-142	T147-142	T27-24	T232 226	T228-223	T216-218
DeSoto, 6, SC	1932	G70	S13	R136L-R	A42	P148	C107	TR83	E110	B102	B174	T147-142	T147-142	T17-14	T232 226	T228-223	T216-218
DeSoto 6 SD	1933	G70	S13	R136L-R	A131	P164	C157	TR10	E21	B102	B174	T147-142	T270-271	T268-269	T232-226	T228-223	T216-218
DeSoto 6, SE	1934	G162	S13	R244L-R	A118	P232	C184	TR10	E283	B119	B173	T146-142	T270-271	T268-269	T232-226	T115-107	T96-94
DeVaux 6-75	1932	G120	S44	R103L-R	A59	P146	C136	TR90	E55	B98	B54	T141-142	T141-142	T18-14	T228-226	T228-223	T216-218
Dodge Bros 4, 124	1927	G81	S39	R220	A50	P10	C2	TR91	E111	B78	B149	T252-249	T274-275	T31-33	T59-53	T131-126	T93-95
Dodge Bros 4, 128	1928	G82	S39	R220	A51	P112	C2	TR92	E111	B3	B149	T255-256	T255-256	T27-23	T181-174	T227-226	T216-217
Dodge Bros Victory 6	1928	G83	S39	R211	A51	P35	C2	TR92	E112	B123	B149	T255-256	B131	T27-23	T181-174	T227-226	T216-217
Dodge Bros., Standard 6	1928	G83	S39	R211	A51	P35	C2	TR92	E112	B123	B149	B141	B131	T27-23	T811-174	T227-226	T216-217
Dodge Bros , Senior 6	1928	G83	S41	R212	A52	P35	C24	TR92	E33	B123	B149	T255-256	T274-275	T27-23	T59-53	T131-126	T93-95
Dodge Bros , 6, DA	1929	G86	S39	R79	A54	P2	C12	TR78	E112	B114	B56	B141	B131	T27-23	T237-239	T228-223	T216-218
Dodge Bros , Senior 6	1929	G83	S41	R212	A53	P2	C13	TR92	E39	B123	B149	B141	B131	T27-23	T59-53	T131-126	T93-95
Dodge Bros , 6, DD	1930	G70	S13	R99	A55R-L	P97	C19	TR88	E113	B118	B148	T147-142	T147-142	T27-24	T232-226	T228-223	T216-218
Dodge Bros , 6, DB	1930	G70	S13	R79	A27	P49	C13	TR248	E112	B60	B56	B141	B131	T27-24	T232-226	T228-223	T216-218
Dodge Bros , Senior 6	1930	G83	S41	R212	A53	P2	C13	TR92	E39	B60	B11	B141	B131	T27-24	T232-226	T228-223	T216-218
Dodge Bros , 8, DC	1930	G86	S13	R100	A55R L	P93	C30	TR88	E114	B119	B148	T147-142	T147-142	T27-24	T232-226	T228-223	T216-218
Dodge Bros , 6, DH	1931	G70	S13	R136L-R	A55R L	P113	C154	TR89	E115	B119	B148	T147-142	T147-142	T27-24	T232-226	T228-223	T216-218
Dodge Bros , 8 DG	1931	G70	S7	R100	A55R L	P93	C158	TR89	E116	B119	B148	T147-142	T147-142	T27-24	T232-226	T228-223	T216-218
Dodge, 6, DL	1932	G70	S13	R136L-R	A55R L	P93	C157	TR89	E117	B102	B174	T147-142	T147-142	T27-24	T232-226	T228-223	T216-218
Dodge, 8, DK	1932	G70	S7	R159L R	A46R L	P111	C158	TR89	E118	B102	B174	B96	B96	T27-24	T237-239	T115-107	T90-92
Dodge, 6, DP	1933	G70	S13	R36L-R	A140	P164	C108	TR13	E22	B107	B173	T147-142	T270-271	T268-269	T225-226	T235-234	T216-218
Dodge, 8 DO	1933	G70	S13	R159L-R	A163	P194	C158	TR10	E30	B102	B174	B96	B97	T27-24	T237-239	T115-107	T90-92
Dodge 6, DR, DS	1934	G70	S13	R246L-R	A140	P235	C187	TR10	E284	B119	B173	T146-142	T270-271	T268-269	T232-226	T235-234	T216-218
Duesenberg, J	1929	G36	S34	R217	A183R-L	P180	C59	TR14	E120	B89	B58	B144	B68	B59	B68	B66	B69
Duesenberg, J	1930	G36	S34	R217	A183R L	P180	C59	TR14	E120	B89	B58	B144	B68	B59	B68	B66	B69
Duesenberg, J	1931	G36	S34	R217	A183R L	P180	C59	TR14	E120	B89	B58	B144	B68	B59	B68	B66	B69
Duesenberg, J	1932	G36	S34	R217	A183R I	P180	C59	TR14	E120	B89	B58	B144	B68	B59	B68	B66	B69
Duesenberg, J	1933	G36	S34	R60	A183R I	P180	C59	TR14	E120	B24	B58	B144	B68	B59	B68	B66	B69
Duesenberg	1934	G37	S34	R60	A183R L	P180	C59	TR14	E120	B24	B58	B144	B68	B59	B68	B66	B69
Durant, 55	1928	G114	S78	R204	R204	A56	C34	TR94	E38	B113	B54	T123-120	T148-142	B87	T80-81	T228-223	T216-218
Durant, 65	1928	G114	S84	R204	A56	P48	C34	TR95	E43	B113	B54	T123-120	T148-142	B87	T80-81	T228-223	T216-218
Durant, 75	1928	G110	S54	R208	A57	P59	C135	TR96	E45	B113	B63	T148-142	T177-174	T264-265	T178-174	T111-107	T93-94
Durant, Four, 4	1929	G114	S78	R209	A56	P48	C69	TR94	E15	B19	B54	T123-120	T8-9	B87	T80-81	T228-223	T216-218
Durant, Six, 60	1929	G114	S84	R204	A56	P48	C69	TR94	E38	B113	B54	T123-120	T148-142	B87	T80-81	T228-223	T216-218
Durant Six, 66	1929	G114	S84	R204	A56	P48	C31	TR97	E43	B113	B63	T123-120	T148-142	B87	T80-81	T228-223	T216-218
Durant, Six, 70	1929	G110	S54	R208	A57	P59	C31	TR98	E45	B113	B63	T148-142	T177-174	T264-265	T178-174	T111-107	T93-94
Durant, 63	1930	G114	S84	R204	A56	P48	C31	TR94	E38	B113	B54	T123-120	T148-142	B87	T80-81	T228-223	T216-218
Durant, 614	1930	G120	S60	R103L-R	A58	P146	C136	TR99	E51	B83	B54	T141-142	T141-142	T18-14	T228-226	T228-223	T216-218
Durant, 617	190	G110	S54	R208	A58	P56	C138	TR100	E45	B113	B63	T247-248	T151-142	T264-265	T152-142	T111-107	T96-94
Durant, 6-10	1931	G120	S62	R130L-R	A58	P3	C136	TR101	E24	B26	B54	T141-142	T141-142	T18-14	T228-226	T228-223	T216-218
Durant, 6-12	1931	G120	S60	R103L-R	A58	P146	C136	TR99	E51	B26	B54	T247-248	T151-142	T264-265	T152-142	T111-107	T96-94
Durant, 6-14	1931	G120	S60	R103L-R	A58	P146	C136	TR99	E51	B26	B54	T247-248	T151-142	T264-265	T152-142	T111-107	T96-94
Durant, 619	1931	G120	S60	R103L-R	A58	P3	C136	TR102	E51	B83	B164	T141-142	T141-142	T18-14	T228-226	T228-223	T216-218
Elcar, 75.	1929	G13	S7	R16	A58	P71	C17	TR48	E2	B4	B54	B140	B61	T18-19	T18-19	T227-223	T216-218
Elcar 95	1929	G13	S7	R16	A138	P71	C27	TR48	E5	B4	B54	B141	B62	T26-23	T188-30	T227-223	T216-218
Elcar, 96	1929	G13	S7	R16	A138	P71	C27	TR48	E5	B4	B54	B141	B62	T26-23	T188-30	T227-223	T216-218
Elcar, 120	1929	G1	S2	R174	A126	P183	C147	TR105	E10	T208-209	B56	B142	B63	T31-33	T62-61	T131-128	T118-120
Erskine, 6, 50	1927	G28	S11	R200	A146	P30	C17	TR72	E19	B111	B53	T243-242	T251-249	T246-245	T133-126	T224-223	T216-218
Erskine, 6 52	1929	G28	S11	R200	A146	P38	C17	TR72	E25	B111	B54	T251-249	T149-142	T18-14	T133-126	T222-223	T216-218
Erskine, 6, 53	1930	G25	S11	R90	A150	P38	C46	TR72	E121	B111	B54	T141-144	T141-142	T17-14	T129-128	T225-223	T216-218
Essex, Super 6	1928	G95	S87	R215L-R	A60	P168	C4	TR106	E123	B45	B54	T124-119	T146-142	T13-12	T52-51	T104-105	T101-11
Essex, Challenger, 6	1929	G124	S89	R215L-R	A60	P7	C4	TR106	E123	B45	B54	T124-119	T146-142	T13-12	T52-51	T104-105	T101-11
Essex Challenger, 6	1930	G125	S91	R102L-R	A62	P104	C131	TR107	E124	B45	B54	T247-249	T147-142	T13-14	T163-164	T228-223	T216-218
Essex Challenger, 6	1931	G125	S63	R102L-R	A63	P104	C10	TR107	E125	B45	B54	T247-249	T147-142	T13 14	T163-164	T228 223	T216-218
Essex, Greater 6	1932	G123	S63	R155L-R	A64	P155	C162	TR108	E126	B45	B86	T147-142	T147-142	T17-14	T163-164	T228-223	T216-218
Essex Terraplane, 6	1933	G126	S19	R155L-R	A164	P212	C126	TR15	F126	B109	B85	T247-249	T156-142	T240-239	T113-107	T233-234	T220-219
Essex Terraplane, 8	1933	G126	S21	R155L-R	A164	P212	C127	TR15	E34	B109	B85	T247-249	T156-142	T240-239	T113-107	T233-234	T220-219
Ford, T	1927	G49	S23	R216	A65	P1		TR109	E128					T300	T300	T1-2	T309

Index of Interchangeable Parts

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MAKE AND MODEL	Year	Generator Armature	Starting Motor Armature	Connecting Rod	Rear Axle Shaft	Bevel Gear and Pinion	Clutch Plate	Transmission	Engine	Bearings							
										Clutch Throwout	Clutch Shaft	Rear Axle			Wheels		
												Bevel Pinion Shaft Front	Bevel Pinion Shaft Rear	Differential	Rear	Front Inner	Front Outer
Turn to page ⋙→		**80**	**82**	**84**	**86**	**88**	**90**	**92**	**94**	**96**	**98**	**100**	**102**	**104**	**106**	**108**	**110**
Ford, A	1928	G43	S16	R67	A66	P74 A	C7	TR110	E129	B146	B55	T200-201	T200-201	T200-204	B156	T82-83	T86-87
Ford, A	1929	G44	S16	R98	A66	P74	C7	TR110	E129	B115	B55	T200-201	T200-201	T200-204	B156	T82-83	T86-87
Ford, A	1930	G45	S16	R98	A66	P74	C8	TR110	E129	B115	B87	T200-201	T200-201	T200-204	B156	T82-83	T86-87
Ford, A	1931	G45	S16	R98	A66	P74	C8	TR110	E129	B115	B87	T200-201	T200-201	T200-204	B156	T82-83	T86-87
Ford, A	1932	G46	S20	R98	A66	P74	C8	TR16	E129	B115	B87	T200-201	T200-201	T200-204	B156	T82-83	T86-87
Ford, B	1932	G46	S20	R170	A66	P74	C8	TR16	E130	B115	B168	T202-203	T202-203	T202-205	B156	T84-85	T88-89
Ford, V8	1932	G46	S20	R221	A6	P74	C164	TR16	E131	B115	B168	T286-287	T206-207	T284-285	B156	T84-85	T88-89
Ford V8-40	1933	G46	S20	R221	A171	P178	C169	TR16	E26	B115	B168	T286-287	T206-207	T284-285	B156	T84-85	T88-89
Ford V8, 40-34	1934	G46	S20	R221	A171	P178	C169	TR16	E285	B115	B168	T286-287		T284-285	B156	T84-85	T88-89
Franklin Airman, 12B & B	1928	G60	S24	R3	A68	P184	C36	TR112	E133	B13	B55	T177-174	T177-174	T38-37	T52-51	T111-107	T99-94
Franklin, 130	1929	G37	S7	R3	A70	P185	C36	TR113	E133	B13	B55	T177-174	T177-174	T38-37	T52-51	T111-107	T99-94
Franklin, 135	1929	G37	S7	R4	A70	P185	C92	TR114	E134	B13	B11	T177-174	T177-174	T38-37	T52-51	T111-107	T99-94
Franklin, 137	1929	G37	S7	R4	A70	P185	C92	TR114	E134	B13	B11	T177-174	T177-174	T38-37	T52-51	T111-107	T99-94
Franklin, 145	1930	G37	S7	R104	A69	P185	C93	TR115	E135	B13	B56	T177-174	T177-174	T38-37	T20-14	T111-107	T99-94
Franklin, 147	1930	G37	S7	R104	A69	P185	C93	TR115	E135	B13	B56	T177-174	T177-174	T38-37	T20-14	T111-107	T99-94
Franklin, 15	1931	G37	S7	R143	A69	P185	C93	TR116	E135	B13	B56	T177-174	T177-174	T38-37	T20-14	T111-107	T99-94
Franklin Olympic, 18	1932	G37	S7	R68	A143	P202	C102	TR17	E135	B13	B168	T177-174	T177-174	T38-37	T20-14	T111-107	T99-94
Franklin, 16	1932	G37	S7	R68	A71	P185	C41	TR17	E135	B13	B168	T177-174	T177-174	T38-37	T20-14	T131-128	T121-120
Franklin, 12, 17	1932	G80	S34	R235	A72	P186	C41	TR18	E186	B13	B170	T184-174	T196-37	T31-33	T60-61	T161-12	T121-119
Franklin Olympic, 18B	1933	G37	S7	R68	A143	P202	C93	TR17	E135	B24	B175	B141	B61	T17-14	T232-226	T228-223	T90-91
Franklin Airman 6, 16B	1933	G37	S7	R68	A71	P185	C102	TR17	E135	B24	B168	T177-174	T177-174	T38-37	T20-14	T131-128	T121-120
Franklin 12 17B	1933	G80	S34	R235	A72	P186	C93	TW18	E136	B24	B170	T184-174	T196-37	T31-33	T60-61	T161-12	T121-120
Franklin Olym 6, 18	1934	G37	S7	R68	A143	P202	C93	TR17	E135	B24	B175	B141	B61	T17-14	T232-226	T228-223	T90-91
Franklin Airman 6, 16	1934	G37	S7	R68	A71	P185	C102	TR17	E135	B24	B168	T177-174	T177-174	T38-37	T20-14	T131-128	T121-120
Franklin V12, 17	1934	G80	S34	R235	A72	P186	C93	TR18	E136	B24	B170	T184-174	T196-37	T31-33	T60-61	T161-12	T121-120
Gardner, 120	1929	G13	S7	R16	A20	P130	C151	TR119	E4		B56	T109-105	T131-128	T26-24	T231-223	T227-223	T216-218
Gardner, 125	1929	G13	S7	R16	A20	P130	C151	TR118	E5		B56	T108-105	T10-12	T26-24	T231-223	T227-223	T216-218
Gardner, 130	1929	G1	S2	R19L-R	A25	P131	C82	TR118	E12		B56	T109-105	T15-12	T21-25	B92	T15-12	T100-11
Gardner, 136	1930	G13	S7	R16	A21	P132	C151	TR120	E3		B11	T109-105	T10-12	T26-25	T231-223	T227-223	T216-218
Gardner, 140	1930	G13	S7	R16	A23	P132	C151	TR120	E6		B11	T108-105	T10-12	T26-25	T231-223	T227-223	T216-218
Gardner, 150	1930	G1	S2	R19L-R	A25	P132	C82	TR121	E12		B56	T109-105	T15-12	T21-24	T131-128	T131-128	T99-94
Gardner, 136	1931	G13	S7	R16	A23	P132	C151	TR120	E3		B11	T109-105	T10-12	T26-25	T231-223	T227-223	T216-218
Gardner, 148	1931	G13	S7	R16	A23	P132	C151	TR120	E6		B11	T109-105	T10-12	T26-25	T231-223	T227-223	T216-218
Gardner, 158	1931	G1	S2	R19L-R	A25	P132	C82	TR122	E12		B57	T109-105	T15-12	T21-24	T170-12	T15-12	T100-11
Graham-Paige, 610	1928	G85	S40	R5	A31	P61	C15	TR123	E137	B110	B53	T247-250	T151-142	T261-262	T130-126	T228-223	T216-218
Graham Paige, 614	1928	G84	S39	R5	A138	P62	C141	TR124	E138	B110	B11	B141	B62	T26-23	T188-30	T228-223	T216-218
Graham-Paige, 619	1928	G84	S41	R6	A30	P63	C146	TR125	E139	B110	B28	B142	B63	T38-37	T21-23	T131-126	T96-94
Graham-Paige, 629	1928	G84	S41	R6	A30	P63	C15	TR125	E139	B110	B28	B142	B63	T38-37	T21-23	T131-126	T96-94
Graham-Paige, 835	1928	G84	S41	R69	A30	P63	C146	TR125	E140	B110	B28	B142	B63	T38-37	T21-23	T131-126	T96-94
Graham-Paige, 612	1929	G39	S5	R73	A22	P92	C15	TR126	E141	B111	B54	T154-155	T146-142	T263-262	T129-126	T228-223	T216-218
Graham-Paige, 615	1929	G40	S2	R73	A129	P62	C141	TR127	E142	B110	B11	B141	B62	T26-23	T18-14	T228-223	T216-218
Graham-Paige, 621	1929	G42	S12	R6	A30	P63	C146	TR128	E139	B128	B28	B142	B63	T38-37	T21-23	T131-126	T96-94
Graham-Paige, 827	1929	G42	S12	R76L-R	A30	P63	C15	TR128	E140	B110	B28	B142	B63	T38-37	T21-23	T131-126	T96-94
Graham-Paige, 837	1929	G42	S12	R76L-R	A30	P63	C146	TR128	E140	B110	B28	B142	B63	T38-37	T21-23	T131-126	T96-94
Graham, Std. 6	1930	G39	S5	R73	A32	P92	C33	TR126	E143	B111	B54	T154-155	T147-143	T263-262	T129-126	T228-223	T216-218
Graham, Spc. 6	1930	G40	S2	R73	A129	P62	C15	TR127	E142	B111	B11	B141	B62	T26-23	T18-14	T228-223	T216-218
Graham, Std. 8	1930	G40	S12	R73	A33	P115	C57	TR129	E144	B111	B93	B141	B62	T38-37	T21-23	T131-126	T96-94
Graham, Spec. 8	1930	G40	S12	R73	A33	P116	C57	TR130	E144	B111	B28	B141	B62	T38-37	T21-23	T131-126	T96-94
Graham, Cust. 8, 127	1930	G42	S12	R76L-R	A33	P63	C57	TR129	E140	B111	B28	B142	B63	T38-37	T21-23	T131-126	T96-94
Graham, Cust. 8, 137	1930	G42	S12	R76L-R	A33	P63	C57	TR129	E140	B111	B28	B142	B63	T38-37	T21-23	T131-126	T96-94
Graham, Prosperity 6, 56	1931	G40	S13	R73	A158	P152	C15	TR131	E143	B111	B54	T154-155	T147-142	T263-262	T129-126	T228-223	T216-218
Graham, Std. 6-53	1931	G40	S13	R73	A34	P118	C15	TR126	E142	B111	B54	T147-143	T177-174	T26-24	T171-12	T228-223	T216-218
Graham, Spec. 6-54	1931	G40	S13	R73	A159	P118	C15	TR132	E142	B111	B57	T147-143	T177-174	T26-24	T171-12	T228-223	T216-218
Graham, Spec. 8	1931	G40	S12	R140L-R	A33	P118	C57	TR133	E145	B111	B57	B141	B62	T26-24	T171-12	T228-223	T216-218
Graham, Cust. 8	1931	G42	S12	R140L-R	A33	P118	C57	TR133	E144	B111	B57	B141	B62	T26-24	T18-14	T131-126	T96-94
Graham, 6, 58	1932	G40	S13	R73	A159	P152	C166	TR134	E143	B145	B54	T154-143	T147-143	T18-14	T129-126	T228-223	T216-218
Graham, 8, 57	1932	G40	S12	R140L-R	A161	P169	C57	TR20	E145	B145	B168	T147-143	T183-174	T26-24	T171-12	T228-223	T216-218
Graham, Std. 6	1933	G20	S12	R73	A161	P213	C166	TR19	E41	B145	B168	T154-143	T270-271	T17-15	T291-126	T228-223	T216-218
Graham, Std. 8	1933	G20	S12	R140L-R	A161	P214	C177	TR20	E145	B145	B168	T147-143	T190-30	T27-30	T171-12	T228-223	T216-218
Graham, Cust. 8	1933	G20	S12	R140L-R	A161	P214	C177	TR20	E145	B145	B168	T147-143	T190-30	T27-30	T171-12	T228-223	T216-218
Graham Std 6, 68	1934	G162	S13	R73	A161	P213	C166	TR19	E41	B115	B168	T154-142	T146-142	T17-15	T291-126	T235-234	T216-218
Graham DeLuxe 6, 68	1934	G162	S13	R73	A161	P213	C166	TR19	E41	B115	B168	T154-142	T146-142	T17-15	T291-126	T235-234	T216-218
Graham Special 8, 67	1934	G163	S13	R140L-R	A161	P214	C177	TR20	E145	B115	B168	T154-142	T270-271	T17-15	T291-126	T228-223	T216-218
Graham Super Spc 8, 69S	1934	G164	S13	R140L-R	A161	P214	C177	TR20	E286	B115	B168	T154-142	T270-271	T17-15	T291-126	T228-223	T216-218
Graham Std 8, 67	1934	G163	S13	R140L-R	A161	P214	C177	TR20	E145	B115	B168	T154-142	T270-271	T17-15	T291-126	T228-223	T216-218
Graham Super Cust 8, 69	1934	G164	S13	R140L-R	A161	P214	C188	TR20	E286	B115	B168	T146-142	T319-315	T27-30	T171-12	T228-223	T216-218
Hudson, Super 6	1928	G96	S83	R8L-R	A84	P114	C5	TR135	E146	B47	B65	T153-142	T66-61	T38-37	T72-73	T50-51	T3-4
Hudson, Super 6	1929	G96	S83	R8L-R	A84	P66	C134	TR135	F146	B45	B65	T153-142	T66-61	T38-37	T72-73	T50-51	T3-4
Hudson Great 8	1930	G125	S58	R102L-R	A61	P105	C149	TR107	E147	B45	B54	T247-249	T147-143	T13-14	T163-164	T228-223	T96-94
Hudson, 8	1931	G125	S49	R102L-R	A63	P105	C10	TR137	E148	B45	B54	T247-249	T147-143	T13-14	T163-164	T228-223	T96-94
Hudson, 8	1932	G123	S49	R155L-R	A36	P155	C162	TR21	E149	B45	B86	T147-143	T147-143	T17-14	T163-164	T228-223	T96-94
Hudson, Super 6	1933	G126	S63	R155L-R	A164	P155	C128	TR21	E126	B45	B86	T156-143	T156-143	T17-14	T163-164	T228-223	T216-218
Hudson, 8	1933	G123	S49	R155L-R	A164	P155	C128	TR21	E149	B45	B86	T156-143	T156-143	T17-14	T163-164	T228-223	T96-94
Hudson 8	1934	G167	S111	R247L-R	A164	P236	C189	TR252	E287	B224	B85	T156-142	T156-142	T320-260	T291-126	T228-223	T98-94
Hupmobile, 6, A, Century	1928	G135	S73	R9	A80	P78	C151	TR140	E151	B111	B27	T149-142	T177-174	T264-265	T158-159	T227-223	T96-95
Hupmobile, 8, M, Century	1928	G103	S68	R12	A79	P67	C148	TR141	E155	B24	B27	T176-174	T190-30	T27-23	T158-159	T227-223	T96-95
Hupmobile 6, A Century	1929	G101	S73	R9	A80	P78	C151	TR140	E151	B111	B27	T141-142	T177-174	T264-265	T158-159	T227-223	T96-95
Hupmobile 8 M, Century	1929	G103	S68	R12	A79	P67	C148	TR141	E155	B130	B27	T176-174	T190-30	T27-23	T158-159	T227-223	T96-95
Hupmobile, 6, S, Century	1930	G118	S51	R87	A80	P92A	C98	TR142	E152	B111	B220	T147-143	T147-143	T263-262	T134-128	T228-223	T96-95
Hupmobile 8, C	1930	G109	S45	R88L-R	A82	P119	C142	TR143	E156	B130	B27	T176-174	T190-30	T27-23	T169-159	T131-128	T96-95
Hupmobile, 8, H	1930	G109	S79	R101L-R	A83	P120	C95	TR144	E157	B130	B56	T177-174	T197-37	T34-33	T16-14	T131-128	T96-95
Hupmobile, Cent. 6, S	1931	G118	S51	R128	A40	P92A	C154	TR145	E152	B111	B55	T147-143	T147-143	T263-262	T134-128	T228-223	T96-95
Hupmobile Cent. 8, L	1931	G122	S59	R122L-R	A160	P119	C55	TR146	E158	B111	B57	T147-143	T177-174	T26-24	T188-30	T228-223	T96-95
Hupmobile, 8, C	1931	G109	S45	R88L-R	A82	P119	C142	TR146	E156	B130	B57	T176-174	T190-30	T27-23	T169-159	T131-128	T96-95
Hupmobile, 8, H	1931	G109	S79	R101L-R	A83	P120	C95	TR145	E157	B130	B58	T177-174	T197-37	T34-33	T16-14	T131-128	T96-95
Hupmobile, 8, U	1931	G109	S79	R101L-R	A83	P120	C95	TR145	E157	B130	B58	T177-174	T197-37	T34-33	T16-14	T131-128	T96-95
Hupmobile, 6, 214, 6S.	1932	G118	S62	R128	A160	P92A	C98	TR147	E152	B111	B55	T147-143	T147-143	T263-262	T134-128	T228-223	T96-95
Hupmobile, 6, 216, 6S	1932	G118	S62	R156L-R	A160	P119	C44	TR24	E153	B111	B165	T147-143	T177-174	T26-24	T167-12	T228-223	T96-95
Hupmobile, 8, 218, 8L	1932	G122	S59	R122L-R	A160	P119	C44	TR146	E158	B111	B57	T147-143	T177-174	T26-24	T884-30	T228-223	T96-95
Hupmobile, 8 221, 8C	1932	G109	S45	R88L-R	A82	P119	C142	TR146	E156	B130	B57	T176-174	T190-30	T27-23	T169-159	T131-128	T96-95
Hupmobile, 8, 222, 8C	1932	G132	S59	R157L-R	A82	P119	C25	TR23	E159	B111	B166	T147-143	T183-174	T26-24	T169-159	T228-223	T96-95
Hupmobile, 8, 225, 8H	1932	G109	S79	R101L-R	A83	P120	C95	TR145	E157	B130	B58	T177-174	T197-37	T34-33	T16-14	T131-128	T96-95
Hupmobile, 8, 226, 8H	1932	G109	S45	R71L-R	A82	P120	C25	TR24	E160	B130	B175	T185-174	T290-37	T27-23	T169-159	T228-223	T96-95
Hupmobile, 8, 237, 8U	1932	G109	S79	R101L-R	A83	P120	C95	TR145	E157	B130	B58	T177-174	T197-37	T34-33	T16-14	T131-128	T96-95
Hupmobile, 321	1933	G118	S46	R156L-R	A173	P224	C172f	TR22	E50	B111	B168	T147-143	T190-30	T27-30	T171-12	T228-223	T96-95
Hupmobile, 322	1933	G132	S59	R219L-R	A172	P225	C172	TR23	E52	B111	B168	T147-143	T183-174	T26-24	T169-159	T228-223	T96-95
Hupmobile, 326	1933	G109	S45	R222L-R	A172	P225	C25	TR24	E53	B18	B175	T147-143	T183-174	T26-24	T169-159	T228-223	T96-95
Hupmobile 6, 417W	1934	G167	S46	R248L-R	A160	P237	C190	TR22	E288	B111	B168	T154-142	T146-142	T17-15	T291-126	T228-223	T96-95
Hupmobile 6 421K	1934	G118	S46	R156L-R	A173	P224	C172	TR22	E50	B111	B168	T147-143	T190-30	T27-30	T171-12	T228-223	T96-95
Hupmobile 6 421A	1934	G118	S46	R156L-R	A173	P224	C172	TR22	E50	B111	B168	T147-143	T190-30	T27-30	T171-12	T228-223	T96-95

Index of Interchangeable Parts

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MAKE AND MODEL	Year	Generator Armature	Starting Motor Armature	Connecting Rod	Rear Axle Shaft	Bevel Gear and Pinion	Clutch Plate	Transmission	Engine	Bearings: Clutch Throwout	Bearings: Clutch Shaft	Bearings: Rear Axle: Bevel Pinion Shaft Front	Bearings: Rear Axle: Bevel Pinion Shaft Rear	Bearings: Rear Axle: Differential	Bearings: Wheels: Rear	Bearings: Wheels: Front Inner	Bearings: Wheels: Front Outer
Turn t page ⋙⟶		**80**	**82**	**84**	**86**	**98**	**90**	**92**	**94**	**96**	**98**	**100**	**102**	**104**	**106**	**108**	**110**
Hupmobile 6 421J	1934	G167	S46	R249L-R	A173	P238	C190	TR22	E289	B111	B168	T146-142	T319-315	T27-30	T291-126	T228-223	T96-95
Hupmobile 8, 422F	1934	G132	S59	R219L-R	A172	P225	C172	TR23	E52	B111	B168	T147-143	T183-174	T26-24	T169-159	T228-223	T96-95
Hupmobile 8, 426I	1934	G109	S45	R222L-R	A172	P225	C25	TR24	E53	B18	B175	T147-143	T193-174	T26-24	T169-159	T228-223	T96-95
Hupmobile 8, 427T	1934	G132	S59	R250L-R	A172	P239	C172	TR23	E290	B111	B168	T146-142	T319-315	T27-30	T171-12	T228-223	T96-95
Jordan, 6, E.	1929	G105	S56	R203	A21	P132	C140	TR119	E49		B56	T272-273	T272-203	T40-42	T231-223	T111-107	T98-94
Jordan, 8, G	1929	G107	S82	R202	A26	P131	C90	TR150	F44		B56	T274-275	T15-12	T27-23	T257-258	T254-253	T96-94
Jordan, 8, 80, T	1930	G119	S82	R177	A21	P91	C90	TR151	E48		B54	T15-12	T109-105	T27-23	T96-94	T111-107	T98-94
Jordan, 8, 90, G	1930	G107	S82	R202	A26	P94	C90	TR151	E44		B56	T15-12	T109-105	T27-23	T131-128	T254-253	T96-94
Jordan, 8, 80, T	1931	G119	S82	R177	A21	P91	C90	TR151	F48		B54	T109-105	T131-128	T13-14	T231-223	T111-107	T99-94
Jordan, 8, 90, G	1931	G107	S82	R202	A26	P94	C90	TR151	E44		B56	T109-105	T15-12	T27-24	T131-128	T131-128	T99-94
Kissel, 6, 73	1929	G13	S7	R109	A24	P188	C6	TR44	E2	B24	B56	T279-278	T279-278	T31-33	T21-23	T161-12	T121-119
Kissel, 8, 95	1929	G13	S7	R109	A170	P17	C6	TR152	E5	B24	B56	T279-278	T279-278	T31-33	T21-23	T54 55	T3-5
Kissel, 8, 126	1929	G26	S2	R19L-R	A170	P96	C81	TR152	E10	B24	B56	T279-278	B37	T31-33	T21-23	T54-55	T3-5
Kissel, 6, 73	1930	G13	S7	R109	A170	P121	C109	TR44	E2	B24	B56	T109-105	T10-25	T26-25	T231-223	T248-253	T216-218
Kissel, 8, 95	1930	G13	S7	R109	A170	P17	C109	TR105	E5	B24	B63	T109-105	T15-12	T26-25	T131-128	T131-128	T99-94
Kissel, 8, 126	1930	G26	S2	R19L-R	A170	P96	C110	TR152	E10	B24	B64	T279-278	T279-278	T31-33	T21-23	T54-55	T3-5
LaFayette 6, 110	1934	G133	S47	R251	A102R-L	P227	C191	TR27	E104	B115	T17-14	T154-142	T146-142	T17-15	T291-126	T232-223	T96-94
LaSalle, V8 303	1928	G57	S9	R183	A11R-L	P76	C99	TR153	E75	B120	B56	B142	B71	T43-42	B68	B187	B186
LaSalle, V8, 328	1929	G57	S9	R74	A12R-L	P76	C99	TR64	E76	B24	B28	B142	B71	T43-42	B68	B187	B186
LaSalle, V8, 340	1930	G57	S7	R74	A14R L	P76	C100	TR65	E70	B24	B28	B142	B50	T43-42	B105	B197	B196
LaSalle, V8, 345	1931	G57	S7	R134	A14R-L	P76	C96	TR66	E71	B24	B28	B142	B50	T43-42	B105	B197	B196
LaSalle, V8, 345B	1932	G76	S7	R134	A15R L	P76	C96	TR7	E72	B24	B177	B142	B67	T43-42	B106	B197	B196
LaSalle, V8, 345C	1933	G76	S7	R134	A15R I	P221	C96	TR7	E72	B24	B177	B142	B67	T43-42	B106	B197	B196
LaSalle 8, 350	1934	G162	S13	R39	A176	P240	C192	TR253	E291	B200	B173	B140	B64	B42	B84	B191	B190
Lincoln, V8	1928	G50		R228	A9R-L	P5	C117	TR25	E163	B73	B66	T65-61	T78-79	T311	T36-37	T54-55	T3-5
Lincoln, V8	1929	G50		R228	A9R-L	P5	C117	TR25	E163	B73	B66	T280-281	T280-281	T311	T36-37	T54-55	T3-5
Lincoln, V8	1930	G50		R228	A9R-L	P5	C117	TR25	E163	B73	B66	T280-281	T280-281	T311	T36-37	T54-55	T3-5
Lincoln, V8	1931	G157	S102	R228	A168	P5	C118	TR25	E164	B115	B94	T280-281	T280-281	T69-70	T36-37	T54-55	T3-5
Lincoln, V8	1932	G89	S102	R230L-R	A167R-L	P5	C118	TR25	E164	B24	B94	T310	B38	T69-70	T38-37	T54-55	T3-5
Lincoln, V12	1932	G88	S103	R231L-R	A167R-L	P5	C118	TR25	E164	B24	B94	T310	B38	T69-70	T38-37	T54-55	T3-5
Lincoln, V12-136	1933	G92	S52	R231L-R	A167R-L	P5	C118	TR25	E79	B24	B94	T310	B63	T69-70	T36-37	T54-55	T3-5
Lincoln V12-145	1933	G94	S65	R231L-R	A167R-I	P5	C118	TR25	E165	B24	B94	T310	B38	T69-70	T36-37	T54-55	T3-5
Lincoln V12	1934	G92	S65	R231L-R	A167R-L	P5	C118	TR254	E292	B24	B94		B63	T38-321	T38-321	T169-12	T106-10
Locomobile, 86	1929	G91	S94	R19L-R	A89	P183	C104	TR155	E13	B116	B56	B142	B63	T31-33	T62-61	T161-12	T118-119
Locomobile, 88	1929	G91	S94	R19L-R	A89	P183	C104	TR156	E13	B116	B56	B142	B63	T31-33	T62-61	T161-12	T118-119
Marmon, 8, 78, N	1928	G18	S10	R21L-R	A92	P8	C72	TR160	E172	B127	B55	B140	B65	B221	T231-223	B191	B190
Marmon, 8, 68	1929	G8	S2	R22	A127	P8	C72	TR161	E173	B127	B54	B140	B61	T18-14	B64	T228-223	T216-218
Marmon, 8, 78	1929	G18	S10	R21L-R	A92	P8	C72	TR160	E172	B127	B55	B140	B65	T31-33	T231-223	B191	B190
Marmon, 8, Roosevelt.	1930	G8	S2	R22	A128	P9	C68	TR162	E171	B127	B54	T154-143	T147-143	T261-262	T129-126	T228-223	T216-218
Marmon, 8-69	1930	G8	S2	R22	A155	P11	C72	TR163	E173	B110	B54	B140	B61	T18-19	B64	T228-223	T216-218
Marmon, 8-79	1930	G18	S2	R113L-R	A156	P198	C71	TR160	E175	B110	B27	B141	B62	T26-23	T188-30	T131-128	T96-94
Marmon, Big 8-89	1930	G18	S2	R113L-R	A157	P157A	C71	TR164	E174	B91	B56	B142	B63	T31-33	T62-61	T131-128	T96-94
Marmon, 70	1931	G8	S2	R22	A128	P92	C68	TR165	E173	B110	B54	T154-143	T147-143	T263-262	T129-128	T228-223	T216-218
Marmon, 88 CC	1931	G18	S2	R113L-R	A157	P157A	C71	TR166	E174	B90	B154	B142	B63	T31-33	T21-22	T131-128	T96-94
Marmon, 16	1931	G74	S37	R198	A94	P199	C122	TR167	E176	B91	B135	T182-174	T76-70	T31-33	T21-22	T166-12	T118-120
Marmon, 8-125, HH	1932	G18	S2	R113L-R	A156	P157A	C71	TR168	E174	B128	B154	B141	B62	T26-24	T188-30	T131-128	T96-94
Marmon, 16	1932	G74	S37	R198	A94	P199	C122	TR167	E176	B91	B135	T182-174	T76-70	T31-33	T21-22	T166-12	T118-120
Marmon, 16	1933	G74	S37	R198	A184	P199	C122	TR26	E176	B91	B135	T188-174	T76-73	T31-33	T21-22	T166-12	T118-120
Marquette, 6	1930	G4	S13	R81	A90	P65	C112	TR187	E177	B200	B55	B140	B64	B46	B211	B191	B190
Nash, Std. 6, 320	1928	G111	S71	R25	A97	P24	C132	TR172	E179	B77	B27	T252-249	T255-256	T264-265	T129-128	T114-112	T96-94
Nash, Spec. 6, 330	1928	G55	S9	R23	A96	P4	C21	TR173	E181	B180	B161	B179	B160	T266-267	B162	B161	B163
Nash, Adv. 6, 360	1928	G56	S9	R24	A96	P127	C83	TR173	E183	B180	B161	B179	B160	T266-267	B162	B161	B163
Nash, Std. 6, 420	1929	G111	S71	R26	A97	P24	C78	TR172	E179	B77	B27	T252-249	T255-256	T264-265	T129-128	T225-223	T216-218
Nash, Spec. 6, 430	1929	G116	S55	R27	A96	P4	C115	TR174	E181	B180	B161	B179	B160	T266-267	B162	B161	B163
Nash, Adv. 6, 460	1929	G127	S55	R28	A96	P127	C83	TR174	E183	B180	B161	B179	B160	T266-267	B162	B161	B163
Nash, Single 6, 450	1930	G111	S47	R96	A98	P126	C99	TR175	E180	B77	B27	T147-143	T147-143	T26-24	T232-226	T225-223	T216-218
Nash, Twin Ign., 6, 480	1930	G128	S57	R27	A96	P12	C115	TR174	E182	B180	B161	B179	B160	T266-267	B162	B161	B163
Nash, Twin Ign., 8, 490	1930	G129	S48	R95	A99	P127	C116	TR174	E184	B180	B161	T183-174	T190-30	T191-30	T16-14	T169-12	T121-119
Nash, 6-60	1931	G111	S47	R96	A100	P126	C155	TR176	E180	B101	T240-238	T147-143	T147-143	T26-24	T232-226	T232-226	T96-94
Nash, 8-70	1931	G111	S47	R125	A100	P13	C51	TR176	E186	B101	T240-238	T147-143	T147-143	T26-24	T232-226	T232-226	T96-94
Nash, 8-80	1931	G133	S46	R126	A100	P128	C51	TR177	E188	B101	T13-14	T147-143	T147-143	T26-24	T232-226	T232-226	T96-94
Nash, 8-90	1931	G133	S48	R127	A101	P127	C116	TR178	E184	B82	T134-128	T183-174	T190-30	T191-30	T16-14	T169-12	T121-119
Nash, 960	1932	G111	S47	R96	A100	P126A	C155	TR179	E180	B101	T17-14	T147-143	T147-143	T26-24	T232-226	T232-226	T96-94
Nash, 970	1932	G111	S47	R125	A100	P126A	C51	TR179	E186	B101	T17-14	T147-143	T147-143	T26-24	T232-226	T232-226	T96-94
Nash, 980	1932	G133	S46	R126	A100	P125	C51	TR180	E188	B101	T240-238	T147-143	T147-143	T26-24	T232-226	T232-226	T96-94
Nash, 990	1932	G133	S48	R127	A101	P127	C116	TR181	E184	B82	T134-128	T183-174	T190-30	T191-30	T16-14	T169-12	T121-119
Nash, 1060, Big 6	1932	G111	S47	R167	A102R-L	P201	C155	TR28	E180	B101	T17-14	T147-143	T183-174	T26-24	T163-12	T232-226	T96-94
Nash, 1070, Std. 8	1932	G34	S27	R168	A102R-L	P201	C51	TR28	E187	B101	T17-14	T147-143	T183-174	T26-24	T163-12	T232-226	T96-94
Nash, 1080, Spc. 8	1932	G47	S32	R169	A100	P125	C51	TR29	E189	B101	T17-14	T147-143	T147-143	T27-24	T259-260	T232-226	T96-94
Nash, 1090, Adv 8	1932	G47	S30	R127	A72L-R	P127	C116	TR182	E185	B180	T27-28	T183-174	T190-30	T27-24	T259-260	T232-226	T96-94
Nash Big 8, 1120	1933	G133	S47	R224	A102R-L	P227	C175	TR27	E104	B115	T17-14	T147-143	T183-174	T26-24	T163-12	T232-226	T96-94
Nash, Std. 8, 1130	1933	G133	S47	R225	A102R-L	P201	C158	TR27	E105	B115	B158	T147-143	T183-174	T26-24	T163-12	T232-226	T96-94
Nash, Spc. 8, 1170	1933	G111	S47	R168	A102R-L	P201	C158	TR28	E119	B115	B158	T193-37	T175-174	T27-24	T259-260	T232-226	T96-94
Nash, Adv. 8, 1180	1933	G133	S46	R169	A174	P215	C160	TR29	E161	B82	B181	T193-37	T175-174	T27-24	T259-260	T232-226	T96-94
Nash, Amb 8, 1190	1933	G133	S48	R127	A175	P127	C170	TR30	E166	B82	T282-283	T71-7 0	T175-174	T43-41	T16-14	T169-12	T121-119
Nash Big 6, 1220	1934	G133	S47	R251	A102R-L	P201	C172	TR254	E293	B115	T17-14	T146-142	T183-174	T27-24	T163-12	T232-223	T96-94
Nash Adv 8, 1280	1934	G133	S46	R252	A174	P215	C193	TR254	E161	B82	B181	T146-142	T183-174	T27-24	T163-12	T232-223	T96-94
Nash Amb 8, 1290..	1934	G133	S48	R127	A175	P127	C194	TR254	E166	B82	T282-283	T193-37	T175-174	T198-199	T16-14	T232-223	T121-119
Oakland, 6, 212	1928	G8	S2	R72	A103	P122	C16	TR183	E190	B112	B55	B140	B64	B46	B211	B185	B184
Oakland, AA6	1929	G8	S2	R80	A103	P23	C18	TR184	E191	B126	B55	B140	B64	B46	B211	B191	B190
Oakland, 8, 101	1930	G66	S14	R92	A103	P18	C152	TR185	E192	B126	B55	B140	B64	B46	B211	B191	B190
Oakland, 8 301	1931	G66	S14	R121	A103	P29	C152	TR185	E192	B126	B153	B140	B64	B46	B211	B191	B190
Oldsmobile, 6, F28	1928	G33	S13	R31	A115	P52	C98	TR187	E194	B200	B55	B140	B65	B46	B64	B191	B190
Oldsmobile, 6, F29	1929	G33	S13	R32	A115	P52	C98	TR187	E194	B200	B55	B140	B65	B46	B64	B191	B190
Oldsmobile, 6, F30	1930	G33	S13	R32	A115	P123	C98	TR187	E194	B200	B55	B140	B64	B46	B64	B191	B190
Oldsmobile, 6, F31	1931	G8	S13	R138	A115	P124	C98	TR188	E195	B200	B153	B140	B64	B46	B64	B191	B190
Oldsmobile, 6, F32	1932	G78	S13	R138	A117	P124	C99	TR189	E196	B200	B152	B140	B64	B42	B55	B191	B190
Oldsmobile, 8, L32	1932	G78	S13	R154	A117	P124	C100	TR189	E197	B200	B152	B140	B64	B42	B55	B191	B190
Oldsmobile, 6, F33	1933	G8	S13	R37	A176	P124	C159	TR31	E167	B200	B152	B140	B64	B42	B84	B191	B190
Oldsmobile, 8, L33	1933	G8	S13	R39	A176	P124	C159	TR31	E169	B200	B152	B140	B64	B42	B84	B191	B190
Oldsmobile 6, F34	1934	G162	S13	R253	A176	P241	C195	TR253	E294	B200	B152		B126	B42	B226	B191	B190
Oldsmobile 8, L34..	1934	G162	S13	R39	A176	P240	C196	TR253	E295	B200	B152	B140	B64	B42	B84	B191	B190
Packard, 6, 526...	1928	G59	S107	R108	A121	P204	C102	TR240	E198	B89	B215	B142	B138	T38-37	B66	T169-12	T121-119
Packard, 6, 533...	1928	G59	S107	R108	A121	P204	C102	TR240	E198	B89	B215	B142	B138	T38-37	B66	T169-12	T121-119
Packard 8, 443	1928	G60	S10	R33	A121	P206	C101	TR241	E199	B89	B215	B143	B138	T69-75	B67	T169-12	T121-1—

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MAKE AND MODEL	Year	Generator Armature	Starting Motor Armature	Connecting Rod	Rear Axle Shaft	Bevel Gear and Pinion	Clutch Plate	Transmission	Engine	Bearings: Clutch Throwout	Bearings: Clutch Shaft	Bearings: Rear Axle: Bevel Pinion Shaft Front	Bearings: Rear Axle: Bevel Pinion Shaft Rear	Bearings: Rear Axle: Differential	Bearings: Wheels: Rear	Bearings: Wheels: Front Inner	Bearings: Wheels: Front Outer
Turn t page ⟶		**80**	**82**	**84**	**86**	**88**	**90**	**92**	**94**	**96**	**98**	**100**	**102**	**104**	**106**	**100**	**110**
Packard, 8, 626 ..	1929	G60	S107	R35	A120	P204	C102	TR242	E200	B24	B215	B142	B138	T38-37	B66	T169-12	T121-119
Packard, 8, 633... ..	1929	G60	S107	R35	A120	P204	C102	TR242	E200	B24	B215	B142	B138	T38-37	B66	T169-12	T121-119
Packard, 8, 640... .	1929	G60	S108	R34	A120	P206	C101	TR246	E199	B24	B215	B143	B138	T69-75	B67	T169-12	T121-119
Packard, 8, 645.....	1929	G60	S108	R34	A120	P206	C101	TR246	E199	B24	B215	B143	B138	T69-75	B67	T169-12	T121-119
Packard, 8, 726.... .	1930	G60	S107	R94	A123	P208	C102	TR190	E200	B24	B58	B142	B138	T38-37	T16-14	T131-128	T121-119
Packard, 8, 733.....	1930	G60	S107	R94	A123	P207	C102	TR190	E200	B24	B58	B142	B138	T38-37	T16-14	T131-128	T121-119
Packard, 8, 740.....	1930	G60	S108	R106	A120	P206	C101	TR190	E199	B24	B58	B143	B138	T77-75	B67	T169-12	T121-119
Packard, 8, 745.....	1930	G60	S108	R106	A120	P206	C101	TR190	E199	B24	B58	B143	B138	T77-75	B67	T169-12	T121-119
Packard, 8, 826.....	1931	G61	S105	R94	A74	P207	C63	TR191	E201	B24	B58	B142	B138	T38-37	T16-14	T131-128	T121-119
Packard, 8, 833.....	1931	G61	S105	R94	A74	P207	C63	TR191	E201	B24	B58	B142	B138	T38-37	T16-14	T131-128	T121-119
Packard, 8, 840.....	1931	G61	S106	R106	A122	P207	C65	TR191	E202	B24	B58	B143	B138	T77-75	B67	T169-12	T121-119
Packard, 8, 845.....	1931	G61	S106	R106	A122	P207	C65	TR191	E202	B24	B58	B143	B138	T77-75	B67	T169-12	T121-119
Packard Light, 8, 900	1932	G61	S104	R163	A124	P207	C63	TR192	E203	B24	B169	B142	B137	T31-32	T259-260	T131-128	T121-119
Packard, 8, 901... .	1932	G61	S104	R163	A124	P207	C63	TR192	E203	B24	B169	B142	B139	T31-32	T259-260	T131-128	T121-119
Packard, 8, 902.....	1932	G61	S104	R163	A124	P207	C63	TR192	E203	B24	B169	B142	B139	T31-32	T259-260	T131-128	T121-119
Packard, 8, 903... .	1932	G61	S104	R164	A125	P207	C65	TR192	E204	B24	B169	B143	B139	T77-75	B67	T169-12	T121-119
Packard, 8, 904...	1932	G61	S104	R164	A125	P207	C65	TR192	E204	B24	B169	B143	B139	T77-75	B67	T169-12	T121-119
Packard, Twin 6, 905, 6	1932	G62	S109	R226L-R	A125	P207	C167	TR242	E205	B24	B169	B143	B138	T77-75	B67	T169-12	T121-119
Packard, 8, 1001 .	1933	G61	S108	R163	A177R-L	P207	C63	TR244	E203	B24	B169	B142	B137	T32-32	T259-260	T131-128	T121-119
Packard Super 8, 1003, 4.	1933	G61	S107	R164	A177R-L	P207	C167	TR244	E204	B24	B169	B143	B138	T31-32	B67	T131-128	T121-119
Packard 12, 1005, 1006	1933	G23	S107	R226L-R	A178	P207	C167	TR245	E170	B24	B169	B143	B138	T77-75	B67	T169-12	T121-119
Packard, 8, 1002 .	1933	G61	S108	R163	A177R-L	P207	C63	TR244	E203	B24	B169	B142	B137	T31-32	B67	T131-128	T121-119
Packard 8, 1100, 1, 2. .	1934	G61	S108	R254	A177R-L	P207	C167	TR244	E203	B24	B169		B142	T31-33	T16-14	T131-128	T121-119
Packard Super 8, 1103, 4, 5	1934	G61	S107	R255	A177R-L	P207	C167	TR244	E204	B24	B169		B143	T31-33	T16-14	T131-128	T121-119
Packard 12, 1107, 8	1934	G23	S107	R256L-R	A178	P207	C167	TR245	E170	B24	B169		B143	T77-75	T259-260	T169-12	T121-119
Peerless, 6-61 ...	1929	G117	S53	R206	A1	P40A	C6	TR193	E29	B6	B27	T109-105	T127-126	T18-19	T166-12	T254 253	T96-94
Peerless, 6-61A	1929	G30	S2	R206	A24	P39	C6	TR193	E29	B6	B27	T109-105	T127-126	T18-19	T166-12	T254-253	T96-94
Peerless, 6-81 . .	1929	G105	S56	R203	A24	P130	C6	TR193	E49	B7	B27	T109-105	T15-12	T26-24	T231-223	T227-223	T216-218
Peerless, 8, 125 ..	1929	G35	S12	R7	A133	P131	C104	TR193	E32	B110	B27	T109-105	T15-12	T27-24	T131-128	T131-128	T99-94
Peerless, Std. 8, A .	1930	G119	S45	R202	A189	P157	C74	TR194	E48	B15	B54	B140	B61	T18-19	B64	T228-223	T216-218
Peerless, Master 8, B...	1930	G131	S69	R201	A188	P157	C71	TR195	E36	B15	B57	B141	B62	T26-23	T188-30	T131-128	T96-94
Peerless, Custom 8, C	1930	G131	S69	R201	A187	P157	C71	TR196	E36	B15	B57	B142	B63	T31-33	T62-61	T131-128	T96-94
Peerless, Std. 8, A	1931	G119	S45	R202	A189	P157	C74	TR194	E48	B15	B54	B140	B61	T18-19	B64	T228-223	T216-218
Peerless, Master 8, B ..	1931	G51	S69	R201	A188	P157	C71	TR195	E36	B15	B57	B141	B62	T26-23	T188-30	T131-128	T96-94
Peerless, Custom 8, C	1931	G51	S69	R201	A187	P157	C71	TR196	E36	B15	B57	B142	B63	T31-33	T62-61	T131-148	T96-94
Peerless, Master 8, B	1932	G51	S69	R201	A188	P157	C71	TR195	E36	B15	B57	B141	B62	T26-23	T188-30	T131-128	T96-94
Peerless, Custom 8, C	1932	G51	S69	R201	A187	P157	C71	TR196	E36	B15	B57	B142	B63	T31-33	T62-61	T131-128	T96-94
Pierce-Arrow, 6, 81	1928	G54	S31	R83	A170	P171	C105	TR199	E268	B9	B55	T279-278	T279-278	T31-33	T21-23	T190-25	T121-120
Pierce-Arrow, 6, 36.	1928	G52	S28	R232	A134	P200	C11	TR198	E210	B89	B59	B29	B72	T302	T210-211	T63-64	T3-6
Pierce-Arrow, 125...	1929	G41	S7	R236	A151	P211	C48	TR200	E211	B110	B55	T182-174	T76-73	T31-33	T16-14	T190-25	T121-120
Pierce-Arrow, 126...	1929	G41	S7	R236	A151	P211	C48	TR201	E211	B110	B55	T182-174	T76-73	T31-33	T16-14	T190-25	T121-120
Pierce-Arrow, 132, C ..	1930	G65	S7	R82	A151	P211	C48	TR202	E212	B110	B57	T182-174	T76-73	T31-33	T16-14	T190-25	T121-120
Pierce-Arrow, 134, B ..	1930	G68	S7	R82	A151	P209	C48	TR202	E213	B110	B57	T182-174	T76-73	T31-33	T16-14	T190-25	T121-120
Pierce-Arrow, 139, B ...	1930	G68	S7	R82	A151	P211	C48	TR202	E214	B110	B57	T182-174	T76-73	T31-33	T16-14	T190-25	T121-120
Pierce-Arrow, 144, A....	1930	G68	S7	R237	A151	P211	C48	TR202	E215	B110	B57	T182-174	T76-73	T31-33	T16-14	T190-25	T121-120
Pierce-Arrow, 43...	1931	G68	S7	R139	A135	P211	C48	TR203	E213	B24	B58	T182-174	T76-73	T43-41	T16-14	T190-25	T121-120
Pierce-Arrow, 42...	1931	G68	S7	R139	A135	P211	C48	TR203	E215	B24	B59	T182-174	T76-73	T43-41	T16-14	T190-25	T121-120
Pierce-Arrow, 41...	1931	G68	S7	R139	A135	P211	C48	TR203	E215	B24	B59	T182-174	T76-73	T43-41	T16-14	T190-25	T121-120
Pierce-Arrow, 54...	1932	G71	S38	R234	A136	P211	C48	TR204	E213	B24	B170	T182-174	T76-73	T43-41	T16-14	T190-25	T121-119
Pierce-Arrow, 53...	1932	G71	S38	R158L-R	A136	P210	C48	TR204	E216	B24	B170	T182-174	T76-73	T43-41	T16-14	T190-25	T121-119
Pierce-Arrow, 52.....	1932	G71	S38	R158L-R	A136	P211	C48	TR204	E217	B24	B170	T182-174	T76-73	T43-41	T16-14	T190-25	T121-119
Pierce-Arrow, 51....	1932	G71	S38	R158L-R	A136	P121	C48	TR204	E217	B24	B170	T182-174	T76-73	T43-41	T16-14	T190-25	T121-119
Pierce-Arrow, 836...	1933	G71	S38	R238	A136	P226	C48	TR32	E206	B24	B170	B28	T276-275	T40-41	T16-14	T131-126	T99-94
Pierce-Arrow, 1236...	1933	G71	S38	R239L-R	A136	P226	C48	TR33	E207	B24	B170	B28	T276-275	T40-41	T16-14	T190-25	T121-119
Pierce-Arrow, 1242...	1933	G71	S38	R239L-R	A136	P210	C48	TR34	E229	B24	B170	T182-174	T76-73	T43-41	T16-14	T190-25	T121-119
Pierce-Arrow, 1247...	1933	G71	S38	R239L-R	A136	P210	C48	TR34	E229	B24	B170	T182-174	T76-73	T43-41	T16-14	T190-25	T121-119
Pierce-Arrow, 836A .	1934	G71	S38	R238	A151	P226	C48	TR32	E206	B24	B170	T183-174	T76-70	T38-37	T16-14	T131-126	T90-94
Pierce-Arrow, 840A	1934	G71	S38	R238	A151	P226	C48	TR32	E296	B24	B170	T183-174	T76-70	T38-37	T16-14	T131-126	T90-94
Pierce-Arrow, 1240A	1934	G71	S38	R239L-R	A151	P226	C48	TR34	E229	B24	B170	T182-174	T76-73	T43-41	T16-14	T190-25	T121-120
Pierce-Arrow, 1248A.	1934	G71	S38	R239L-R	A151	P226	C48	TR34	E229	B24	B170	T182-174	T76-73	T43-41	T16-14	T190-25	T121-120
Plymouth, 4, Q	1929	G12	S2	R78	A42	P54	C106	TR72	E218	B118	B54	T154-143	T147-143	T261-262	T232-226	T228-223	T216-218
Plymouth, 4, U, U30....	1930	G12	S13	R78	A42	P54	C68	TR72	E219	B118	B54	T154-142	T146-142	T261-262	T232-226	T228-223	T216-218
Plymouth, 4, PA. .	1931	G70	S13	R116	A42	P149	C99	TR205	E219	B119	B148	T147-143	T147-143	T17-14	T232-226	T228-223	T216-218
Plymouth, 4, PB. ..	1932	G70	S13	R116	A42	P149	C107	TR205	E220	B119	B174	T147-143	T147-143	T17-14	T232-226	T228-223	T216-218
Plymouth, 6, PC.	1932	G70	S13	R233L-R	A42	P164	C19	TR13	E221	B119	B174	T147-143	T270-271	T268-269	T225-226	T235-234	T216-218
Plymouth, Std. 6, PC.	1933	G70	S13	R233L-R	A140	P164	C108	TR13	E230	B119	B173	T147-143	T270-271	T268-269	T225-226	T235-234	T216-218
Plymouth, DL6, PD .	1933	G70	S13	R233L-R	A140	P164	C108	TR13	E230	B119	B173	T147-143	T270-271	T268-269	T225-226	T235-234	T216-218
Plymouth 6, PF, PG	1934	G4	S13	R257L-R	A140	P235	C197	TR10	E297	B119	B173	T146-142	T270-271	T268-269	T232-226	T235-234	T216-218
Plymouth DeLuxe 6, PE.	1934	G165	S13	R257L-R	A140	P235	C197	TR10	E297	B119	B173	T146-142	T270-271	T268-269	T232-226	T235-234	T216-218
Pontiac, 6-27.	1927	G4	S2	R110	A47	P45	C86	TR68	E222	B222	B54	B25	B64	B46	B64	B183	B182
Pontiac, 6-28.	1928	G4	S2	R110	A47	P45	C89	TR68	E222	B126	B54	B25	B64	B46	B64	B183	B182
Pontiac, 6-29.	1929	G4	S2	R110	A103	P45	C89	TR69	E223	B126	B54	B140	B64	B46	B211	B183	B182
Pontiac, 6-30. ...	1930	G4	S14	R110	A103	P122	C18	TR69	E223	B126	B54	B140	B64	B46	B211	B183	B182
Pontiac, 6, 401. .	1931	G4	S14	R110	A103	P29	C123	TR69	E223	B126	B86	B140	B64	B46	B211	B183	B182
Pontiac, 6, 402.....	1932	G77	S14	R153	A103	P29	C124	TR209	E224	B126	B152	B140	B64	B46	B211	B183	B182
Pontiac, 8, 302	1932	G66	S14	R121	A103	P151	C124	TR210	E225	B126	B152	B140	B64	B46	B211	B191	B190
Pontiac, 8, 601.	1933	G77	S22	R43	A179	P179	C129	TR9	E231	B223	B87	B132	B51	B42	B217	B183	B182
Pontiac 8, 603	1934	G162	S110	R43	A195	P242	C129	TR9	E298	B223	B87	B132	B51	B42	B217	B183	B182
Reo Wolverine, 6, B.	1928	G83	S39	R206	A138	P34	C91	TR45	E35	B9	B56	B141	B62	T26-23	T188-30	T111-107	T96-94
Reo Flying Cloud, 6, A.	1928	G2	S7	R42	A139	P33	C90	TR211	E226	B9	B56	B142	B62	T31-33	T52-53	T131-128	T96-94
Reo Mate, 6, B2...	1929	G24	S15	R206	A141	P68	C94	TR45	E46	B24	B56	B141	B62	T26-23	T188-30	T111-107	T96-94
Reo Master, 6, C . .	1929	G24	S7	R97	A75	P140	C90	TR211	E227	B24	B56	B142	B62	T31-33	T52-53	T131-128	T96-94
Reo, 6, 15, Mate.. .	1930	G24	S15	R206	A141	P68	C94	TR45	E46	B24	B56	B142	B62	T26-23	T188-30	T111-107	T96-94
Reo, 6, 20, Fly Cloud..	1930	G18	S7	R97	A75	P73	C90	TR211	E227	B24	B56	B142	B62	T31-33	T52-53	T131-128	T96-94
Reo, 6, 25, Fly. Cloud..	1930	G24	S7	R97	A75	P140	C90	TR211	E227	B24	B56	B142	B62	T31-33	T52-53	T131-128	T96-94
Reo, 6, 15, Mate.. .	1931	G24	S15	R206	A141	P140	C94	TR45	E46	B24	B56	B142	B62	T26-23	T188-30	T111-112	T96-94
Reo, 6, 20, Fly. Cloud..	1931	G24	S7	R97	A75	P73	C90	TR211	E227	B24	B56	B142	B62	T31-33	T52-53	T131-128	T96-94
Reo, 6, 25, Fly. Cloud..	1931	G24	S7	R97	A75	P140	C90	TR211	E227	B24	B56	B142	B62	T31-33	T52-53	T131-128	T96-94
Reo, 8, 30, 31, Royale.	1931	G24	S7	R129	A142	P142	C95	TR212	E228	B24	B57	B143	B62	T34-33	T16-14	T131-128	T96-94
Reo, 8, 35, Imperial ...	1931	G24	S7	R129	A142	P145	C95	TR212	E228	B24	B57	B143	B62	T34-33	T16-14	T131-128	T96-94
Reo, 6-21, 25, Fly. Cl'd.	1932	G28	S7	R97	A75	P73	C90	TR211	E227	B24	B56	B142	B62	T31-33	T52-53	T131-128	T96-94
Reo, 8-21, Fly. Cloud...	1932	G28	S7	R145L-R	A75	P140	C90	TR211	E56	B24	B56	B142	B62	T34-33	T16-14	T131-128	T96-94
Reo, 8-25, Fly. Cloud...	1932	G28	S7	R145L-R	A75	P140	C90	TR211	E56	B24	B56	B142	B62	T34-33	T16-14	T131-128	T96-94
Reo, 8	1932	G8	S2	R171	A143	P165	C163	TR213	E227	B17	B149	B142	B62	T17-14	T232-226	T228-223	T90-91
Reo, 8, 31, Royale.....	1932	G24	S7	R129	A142	P141	C45	TR212	E228	B20	B57	B143	B62	T34-33	T16-14	T131-128	T96-94
Reo, 8, 35, 52.....	1932	G24	S7	R129	A142	P141	C95	TR212	E228	B20	B57	B143	B62	T34-33	T16-14	T131-128	T96-94
Reo S, S2	1933	G8	S2	R171	A143	P220	C163	TR35	E227	B18	B175	B141	B61	T17-14	T232-226	T228-223	T90-91
Reo, Royale, N-1, 2....	1933	G24	S7	R129	A142	P219	C95	TR36	E228	B20	B178	B143	B62	T34-33	T16-14	T131-128	T96-94
Reo 6, S-4	1934	G8	S2	R171	A143	P220	C163	TR35	E227	B18	B175	B141	B61	T17-14	T232-226	T228-223	T90-91
Reo, Royale 8, N1, N2	1934	G24	S7	R129	A142	P219	C95	TR36	E228	B20	B178	B143	B62	T34-33	T16-14	T131-128	T96-94
Rockne, 6-65	1932	G126	S61	R112L-R	A174	P158	C97	TR37	E232	B103	B168	T154-143	T147-143	T17-15	T111-107	T235-234	T216-218

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MAKE AND MODEL	Year	Generator Armature	Starting Motor Armature	Connecting Rod	Rear Axle Shaft	Bevel Gear and Pinion	Clutch Plate	Transmission	Engine	Bearings: Clutch Throwout	Bearings: Clutch Shaft	Bearings: Rear Axle: Bevel Pinion Shaft Front	Bearings: Rear Axle: Bevel Pinion Shaft Rear	Bearings: Rear Axle: Differential	Bearings: Wheels: Rear	Bearings: Wheels: Front Inner	Bearings: Wheels: Front Outer
Turn t page ⟶		**80**	**82**	**84**	**86**	**88**	**90**	**92**	**94**	**96**	**98**	**100**	**102**	**104**	**106**	**108**	**110**
Rockne, 6-75	1932	G126	S56	R151	A154	P166	C46	TR37	E121	B103	B168	T141-144	T141-143	T17-14	T137-128	T225-223	T216-218
Rockne, 6, 10	1933	G126	S61	R160L-R	A180	P181	C97	TR37	E232	B103	B168	T154-143	T147-143	T17-15	T111-107	T235-234	T216-218
Roosevelt	1929	G8	S2	R22	A123	P92	C68	TR162	E171	B127	B54	T154-143	T147-143	T261-262	T129-126	T228-223	T216-218
Roosevelt ..	1930	G8	S2	R22	A128	P92	C68	TR162	E171	B127	B54	T154-143	T147-143	T261-262	T129-126	T228-223	T216-218
Star, 4, M	1928	G142	S78	R209	A56	P48	C69		E15	B19	B54	T123-120	T8-9	B87	T80-81	T228-223	T216-218
Stearns-Knight, M, 6-80	1929	G139	S44	R62	A110	P172	C81	TR217	E235	B205	B58	B141	B70	T31-33	B67	T161-12	T121-120
Stearns-Knight, N, 6-80	1929	G139	S44	R62	A110	P172	C81	TR218	E235	B205	B58	B141	B70	T31-33	B67	T161-12	T121-120
Stearns-Knight, H, 8-90	1929	G27	S99	R205	A166	P173	C95	TR215	E234	B21	B16	B39	T279-278	T45-49	T27-29	T54-55	T3-5
Stearns-Knight, J, 8-90.	1929	G27	S99	R205	A166	P173	C95	TR216	E234	B21	B16	B39	T279-278	T45-49	T27-29	T54-55	T3-5
Stearns-Knight, H, 8-90	1930	G27	S99	R205	A166	P173	C95	TR217	E234	B23	B16	B65	T279-278	T45-49	T27-29	T54-55	T3-5
Stearns-Knight, J, 8 90.	1930	G27	S99	R205	A166	P173	C95	TR218	E234	B23	B16	B65	T279-278	T45-49	T27-29	T54-55	T3-5
Studebaker, Std. 6, EU.	1927	G25	S2	R46	A145	P14	C76	TR219	E239	B4	B64	T175-174	T190-30	T31-33	T186-174	T125-126	T99-94
Studebaker, Special 6	1927	G7	S3	R207	A144	P15	C77	TR220	E240	B4	B65	T274-275	T276-275	T31-33	T163-12	T125-126	T93-95
Studebaker, Big 6, ES.	1927	G7	S3	R47	A144	P15	C77	TR220	E241	B4	B56	T277-278	T279-278	T31-33	T62-61	T165-159	T121-120
Studebaker Dict. 6, EU	1927	G25	S2	R46	A145	P14	C76	TR219	E239	B4	B64	T175-174	T190-30	T31-33	T186-174	T165-159	T121-120
Studebaker Com 6, EW	1927	G7	S3	R207	A144	P15	C77	TR220	E240	B4	B64	T277-278	T279-278	T31-33	T62-61	T165-159	T121-120
Studebaker Pres. 6, ES	1928	G7	S3	R47	A144	P15	C77	TR220	E241	B8	B56	T175-174	T190-30	T31-33	T56-53	T131-126	T99-94
Studebaker Com. 6, GH	1928	G7	S3	R207	A144	P15	C77	TR220	E240	B8	B64	T175-174	T190-30	T31-33	T56-53	T131-126	T99-94
Studebaker, Dict., 6 GE	1928	G25	S2	R111	A145	P72	C37	TR219	E239	B6	B64	T175-174	T190-30	T31-33	T186-174	T125-126	T99-94
Studebaker, Com. 6 GB	1928	G7	S3	R47	A148	P58	C41	TR221	E241	B8	B64	T175-174	T190-30	T31-33	T56-53	T131-126	T99-94
Studebaker Pres., 8 FA.	1928	G18	S7	R48	A148	P75	C45	TR221	E242	B8	B56	T175-174	T190-30	T31-33	T56-53	T131-126	T99-94
Studebaker Dict. 6GE	1929	G25	S2	R115	A149	P72	C37	TR222	E239	B110	B54	T149-150	T177-174	T17-14	T232-226	T114-107	T90-92
Studebaker, Com. 6 GJ	1929	G7	S3	R124	A149	P144	C49	TR223	E243	B110	B54	T149-150	T177-174	T17-14	T232-226	T114-107	T90-92
Studebaker, Com. 8 FD	1929	G18	S8	R70	A148	P85	C49	TR223	E244	B110	B54	T149-150	T177-174	T17-14	T232-226	T114-107	T90-92
Studebaker, Pres. 8 FH	1929	G18	S7	R49L-W	A148	P82	C45	TR221	E245	B110	B56	T182-174	T194-195	T31-33	T16-14	T131-126	T99-94
Studebaker, Pres. 8 FE.	1929	G18	S7	R49L-R	A148	P75	C45	TR221	E245	B110	B56	T182-174	T194-195	T31-33	T16-14	T131-126	T99-94
Studebaker, 6, 53	1930	G25	S11	R90	A150	P166	C46	TR72	E121	B1	B54	T141-144	T141-142	T17-14	T129-128	T225-223	T216-218
Studebaker, Dict. 6, GL	1930	G25	S8	R90	A150	P166	C46	TR222	E246	B1	B54	T141-144	T141-142	T17-14	T129-128	T225-223	T216-218
Studebaker, Dict. 8, FC.	1930	G18	S8	R89	A150	P83	C46	TR222	E247	B110	B54	T173-174	T192-30	T17-14	T129-128	T225-223	T216-218
Studebaker, Com. 6 GJ	1930	G25	S8	R124	A149	P144	C49	TR223	E243	B110	B54	T149-150	T177-174	T17-14	T232-226	T117-107	T90-92
Studebaker, Com. 8 FD	1930	G18	S8	R70	A153	P84	C49	TW223	E244	B110	B54	T173-174	T192-30	T17-14	T232-226	T114-107	T90-92
Studebaker, Pres. 8 FH	1930	G18	S7	R49L-R	A151	P75	C45	TR224	E245	B110	B56	T182-174	T194-195	T31-33	T17-14	T131-126	T99-94
Studebaker, Pres. 8 FL.	1930	G18	S7	R49L-R	A151	P75	C45	TR224	E245	B110	B56	T182-174	T194-195	T31-33	T17-14	T131-126	T99-94
Studebaker, 6, 54	1931	G4	S11	R132	A150	P143	C46	TR38	E121	B1	B55	T141-144	T141-142	T17-14	T129-128	T225-223	T216-218
Studebaker, Dict., 8 61.	1931	G18	S36	R89	A150	P166	C46	TR222	E250	B1	B57	T141-144	T141-142	T17-14	T129-128	T225-223	T216-218
Studebaker, Com , 8-70.	1931	G18	S36	R70	A153	P143	C49	TR223	E252	B110	B57	T173-174	T192-30	T17-14	T232-226	T114-107	T90-92
St d baker Pres. 8, 80, 90	1931	G71	S7	R131	A151	P75	C45	TR225	E253	B110	B58	T182-174	T194-195	T31-33	T16-14	T131-126	T99-94
Studebaker, 6, 55	1932	G4	S11	R147	A154	P79	C55	TR38	E249	B1	B168	T141-144	T141-143	T17-14	T137-128	T225-223	T216-218
Studebaker Dict. 8, 62	1932	G18	S36	R148	A154	P143	C55	TR38	E251	B1	B168	T173-174	T192-30	T17-14	T137-128	T225-223	T216-218
Studebaker, Com. 8, 71.	1932	G18	S36	R149	A152	P143	C66	TR39	E252	B1	B168	T173-174	T192-30	T17-14	T232-226	T114-107	T90-92
Studebaker Pres. 8, 91	1932	G71	S38	R150	A147	P75	C62	TR40	E248	B110	B170	T182-174	T194-195	T31-33	T16-14	T131-126	T99-94
Studebaker, 6, 56	1933	G4	S11	R45	A153	P216	C168	TR38	E265	B103	B168	T183-174	T295-30	T17-14	T137-128	T225-223	T16-218
Studebaker Com , 8, 73	1933	G18	S36	R50	A153	P216	C168	TR39	E266	B103	B168	T183-174	T295-30	T17-14	T232-226	T114-107	T290-92
Studebaker Pres. 8 82	1933	G18	S36	R150	A152	P217	C62	TR40	E252	B103	B168	T182-174	T194-195	T31-33	T16-14	T131-126	T99-94
Studebaker Spd. Pres 92	1933	G71	S38	R150	A147	P75	C62	TR40	E248	B110	B170	T182-174	T194-195	T31-33	T16-14	T131-126	T99-94
Studebaker, Dict 6, A	1934	G126	S61	R259L-R	A180	P181	C97	TR37	E299	B103	B168	T154-142	T146-142	T17-15	T111-107	T235-234	T216-218
Studebaker Com 8, B	1934	G18	S36	R50	A153	P244	C198	TR37	L300	B1	B168	T154-142	T270-271	T17-15	T131-126	T225-223	T216-218
Studebaker Pres 8, C	1934	G18	S36	R258	A152	P245	C199	TR40	E252	B1	B168	T146-142	T319-315	T27-30	T167-12	T114-107	T90-92
Stutz, 8, M	1929	G63	S9	R52	A165	P175	C38	TR226	E254	B24	B57	B36	T279-278	T45-49	B74	T54-55	T3-5
Stutz, 8, MA	1930	G63	S9	R53	A165	P175	C60	TR54	E254	B24	B64	B36	T279-278	T45-49	B74	T54-55	T3-5
Stutz, 8, MB	1930	G63	S9	R53	A165	P175	C60	TR54	E254	B24	B64	B36	T279-278	T45-49	B74	T54-55	T3-5
Stutz, 6, LA	1931	G21	S9	R53	A162	P177	C38	TR54	E58	B24	B57	B39	T272-273	T47-49	T18-19	T115-107	T96-94
Stutz, 8, MA	1931	G63	S9	R53	A165	P175	C60	TR42	E254	B24	B57	B36	B65	T47-49	B74	T54-55	T3-5
Stutz, 8, MB	1931	G63	S9	R53	A165	P175	C60	TR42	E254	B24	B57	B36	B65	T47-49	B74	T54-55	T3-5
Stutz, 6, I AA	1932	G21	S9	R53	A162	P177	C38	TR54	E58	B110	B57	B39	T272-273	T47-49	T207-19	T115-116	T96-94
Stutz, 8, SV16 .	1932	G63	S9	R53	A162	P177	C93	TR42	E254	B24	B175	B65	T279-278	T45-49	T27-29	T54-55	T3-5
Stutz, 8, DV32	1932	G63	S9	R53	A162	P175	C93	TR42	E255	B24	B175	B65	T279-278	T45-49	T27-29	T54-55	T3-5
Stutz, I AA 6 . .	1933	G21	S9	R53	A162	P177	C93	TR54	E58	B110	B57	T272-273	B65	T47-49	T18-19	T115-107	T96-94
Stutz, SV 16	1933	G63	S9	R53	A162	P177	C93	TR42	E254	B24	B175	T279-278	B65	T198-199	T27-29	T54-55	T3-5
Stutz, DV 32	1933	G63	S9	R53	A162	P175	C93	TR42	E255	B24	B175	T279-278	B65	T198-199	T27-29	T54-55	T3-5
Stutz 8 SV16	1934	G63	S9	R53	A162	P177	C93	TR42	E254	B24	B175	T279-278	B65	T198-199	T27-29	T54-55	T3-5
Stutz 8 DV32	1934	G63	S9	R53	A162	P175	C93	TR42	E255	B24	B175	T279-278	B65	T198-199	T27-29	T54-55	T3-5
Terraplane 6	1934	G167	S112	R247L-R	A164	P236	C200	TR252	E301	B224	B85	T156-142	T156-142	T320-260	T113-107	T233-234	T220-219
Viking, V29, V30	1930	G8	S12	R75	A116	P99	C82	TR228	E258	B201	B149	B141	B66	B47	B209	B191	B190
Whippet, 4	1927	G144	S26	R57L-R	A104	P28	C75	TR229	E259	B120	B54	T121-120	T106-107	T18-19	T133-126	T228-223	T216-218
Whippet, 6	1927	G147	S77	R58	A104	P19	C79	TR230	E260	B120	B55	B27	B64	T26-23	B65	T228-223	T216-218
Whippet, 4, 96	1928	G112	S26	R59L-R	A107	P53 A	C87	TR229	E261	B120	B54	T121-120	T106-107	T18-19	T133-126	T228-223	T216-218
Whippet, 6 98	1928	G115	S86	R65	A108	P53	C79	TR 231	E263	B120	B55	B27	B64	T18-19	B65	T228-223	T216-218
Whippet, 4, 96A	1929	G112	S26	R59	A107	P28A	C87	TR 232	E262	B120	B54	T121-120	T106-107	T18-19	T133-126	T228-223	T216-218
Whippet, 6, 98A	1929	G115	S86	R65	A108	P28A	C79	TR233	E263	B120	B55	T247-248	T151-142	T18-19	T133-126	T228-223	T216-218
Whippet, 4, 96A	1930	G112	S26	R59	A107	P28A	C87	TR232	E262	B120	T244-245	T121-120	T106-107	T18-19	T133-126	T228-223	T216-218
Willys, 6, 98B	1930	G121	S61	R105L-R	A108	P135	C67	TR233	E264	B120	B54	T247-248	T151-142	T18-19	T133-126	T228-223	T216-218
Willys Six, 97	1931	G53	S43	R142L-R	A112	P137	C67	TR234	E264	B120	B54	T247-248	T151-142	T18-19	T133-126	T228-223	T216-218
Willys Six, 98D..	1931	G121	S90	R142L-R	A112	P137	C67	TR234	E264	B120	B54	T247-248	T151-142	T18-19	T133-126	T228-223	T216-218
Willys, 8-80	1931	G121	S45	R123L-R	A111	P136	C23	TR235	E42	B120	B55	T247-248	T151-142	T18-19	T133-126	T228-223	T216-218
Willys, 8-80D	1931	G121	S50	R123L-R	A111	P136	C23	TR235	E42	B120	B55	T154-142	T151-142	T26-23	T167-12	T237-239	T90-92
Willys 77 .	1933	G126	S29	R54	A181	P218	C173	TR43	E268	B120	B55	T235-236	T235-236	T232-223	T110-107	T235-234	T216-218
Willys 77	1934	G126	S29	R54	A181	P218	C173	TR43	E268	B120	B55	T235-236	T235-236	T232-223	T110-107	T235-234	T216-218
Willys-Overland, 6-90	1932	G121	S90	R213L-R	A112	P137	C67	TR234	E264	B120	B54	T247-248	T151-143	T18-19	T133-126	T228-223	T216-218
Willys-Overland, 8-88.	1932	G121	S50	R123L-R	A111	P136	C23	TR236	E42	B122	B55	T154-143	T151-143	T26-23	T167-12	T237-239	T90-92
Willys-Knight, 70	1927	G152	S67	R63	A106	P31	C88	TR237	E236	B122	B55	T141-145	T177-174	T27-23	B65	T127-128	T93-94
Willys-Knight, 66 .	1927	G139	S67	R61	A105	P138	C80	TR238	E237	B122	B58	B141	B70	T31-33	B67	T161-12	T121-120
Willys-Knight, 56	1928	G113	S44	R65	A104	P32	C88	TR231	E127	B120	B55	T247-248	T151-142	T26-23	T231-223	T127-128	T93-94
Willys-Knight, 70A	1928	G113	S44	R64	A106	P80	C88	TR237	E236	B122	B55	T141-145	T177-174	T27-23	B65	T127-128	T93-94
Willys-Knight, 66A	1928	G139	S44	R62	A105	P138	C85	TR238	E235	B122	B58	B141	B70	T31-33	B67	T161-12	T121-120
Willys-Knight, 70B	1929	G113	S44	R64	A109	P69	C70	TR239	E236	B120	B55	T247-248	T151-142	T26-23	T231-223	T228-223	T90-92
Willys-Knight, 66B	1929	G98	S45	R62	A110	P86	C73	TR237	E235	B122	B57	T177-174	T189-30	T46-48	T240-239	T127-128	T93-94
Willys-Knight, 87 .	1930	G113	S44	R64	A109	P69	C70	TR239	E236	B120	B55	T247-248	T151-142	T26-23	T231-223	T228-223	T90-92
Willys-Knight, 70B	1930	G113	S44	R64	A109	P69	C70	TR239	E236	B120	B55	T247-248	T151-142	T26-23	T231-223	T228-223	T90-92
Willys-Knight, 66B	1930	G87	S41	R62	A110	P86	C73	TR237	E238	B122	B57	T177-174	T189-30	T27-24	T240-239	T131-128	T93-94
Willys-Knight, 66D	1931	G106	S45	R62	A110	P139	C73	TR235	E238	B122	B55	T177-174	T189-30	T27-24	T167-12	T237-239	T90-92
Willys-Knight, 95 .	1932	G106	S59	R146	A112	P69	C67	TR234	E239	B120	B54	T247-248	T151-143	T18-19	T133-126	T228-223	T216-218
Willys-Knight, 66D	1932	G106	S45	R62	A110	P139	C73	TR235	E238	B122	B55	T177-174	T189-30	T27-24	T167-12	T237-239	T90-92
Windsor, 8-82 ..	1929	G28	S7	R202	A24	P6	C82	TR105	E44	B4	B56	T109-105	T20-12	T21-25	T167-12	T254-253	T96-94
Windsor, 8-92 ..	1929	G28	S7	R202	A24	P132	C82	TR93	E44	B4	B56	T109-105	T20-12	T21-25	T167-12	T254-253	T96-94
Windsor, 6-69 ..	1929	G119	S56	R204	A24	P55	C139	TR48	E54	B4	B54	T109-105	T38-12	T18-19	T231-223	T227-223	T216-218
Windsor, 6-72 ..	1929	G30	S2	R206	A22	P55	C113	TR48	E29	B4	B54	T109-105	T38-12	T18-19	T231-223	T227-223	T216-218
Windsor, 6-77	1929	G30	S2	R206	A22	P132	C137	TR93	F29	B4	B54	T109-105	T38-12	T18-19	T231-223	T227-223	T216-218

Interchangeable Generator Armatures

DIRECTIONS—All Generator Armatures listed under one number, such as G1, are interchangeable. Also read directions at top of page 74.

G 1	Auburn, 115	1928
	Auburn, 120	1929
	Auburn, 125	1930
	Elcar, 120	1929
	Gardner, 130	1929
	Gardner, 150	1930
	Gardner, 158	1931
G 2	Reo Flying Cloud, 6, A	1928
G 4	Chevrolet, 4, AA	1927
	Chevrolet, 4, AB	1928
	Chevrolet, 6, AC	1929
	Chevrolet, 6, AD	1930
	Chevrolet, 6, AE	1931
	Chevrolet, 6, BA	1932
	Chevrolet, Std 6, CC	1933
	Chevrolet, Mast 6, CA	1933
	Chevrolet, Std 6, DC	1934
	Chrysler, 65	1929
	Chrysler, 66	1930
	DeSoto, 6, K	1929
	DeSoto 6 CK	1930
	Marquette, 6	1930
	Plymouth, 6, PF, PG	1934
	Pontiac, 6 27	1927
	Pontiac, 6 28	1928
	Pontiac, 6 29	1929
	Pontiac, 6 30	1930
	Pontiac, 6 401	1931
	Studebaker, 6 54	1931
	Studebaker, 6, 55	1932
	Studebaker, 6 56	1933
G 5	Chrysler, 62	1928
	Chrysler, 72	1928
	Oakland, Greater 6	1927
G 6	Cord, 8, L-29	1930
	Cord, 8, L 30	1931
	Cord, 8, L 30	1932
G 7	Studebaker, Special 6	1927
	Studebaker, Big 6	1927
	Studebaker, Commander 6	1928
	Studebaker, Commander 6	1929
G 8	Chrysler, 70	1930
	Chrysler 77	1930
	Chrysler, 66	1931
	Chrysler, 70	1931
	Marmon, 8, 68	1929
	Marmon 8 Roosevelt	1930
	Marmon, 8 69	1930
	Marmon, 70	1931
	Oakland 6 212	1928
	Oakland AA6	1929
	Oldsmobile 6, F31	1931
	Oldsmobile, 6, F33	1933
	Oldsmobile, 8 L33	1933
	Reo, S	1932
	Reo, S	1933
	Reo, 6 S 4	1934
	Roosevelt	1929
	Roosevelt	1930
	Viking, V29, V30	1930
G 9	Austin	1933
	Austin	1934
G 12	Chrysler 52	1928
	Plymouth 4	1929
	Plymouth, 4	1930
G 13	Auburn, 76	1928
	Auburn, 88	1928
	Auburn, 6 80	1929
	Auburn 8 90	1929
	Auburn, 6 85	1930
	Auburn, 8 95	1930
	Auburn, 8 98	1931
	Auburn, 8 100	1932
	Auburn, 8 101	1933
	Auburn, 8 105	1933
	Elcar, 75	1929
	Elcar, 95	1929
	Elcar, 96	1929
	Gardner, 120	1929
	Gardner, 125	1929
	Gardner, 136	1930
	Gardner, 140	1930
	Gardner 136	1931
	Gardner, 148	1931
	Kissel, 6 73	1929
	Kissel, 8 95	1929
	Kissel, 6, 73	1930
	Kissel, 8, 95	1930
G 14	Buick, 115	1928
	Buick, 120	1928
	Buick, 128	1928
G 15	Chandler, Big 6	1929
G 16	Buick 33 50	1933
	Buick 33 60	1933
	Buick, 33 80	1933
	Buick 33 90	1933
G 17	Chandler, 65	1929
G 18	Marmon, 8, 78	1929
	Marmon, 8 79	1930
	Marmon, Big 8 89	1930
	Marmon, 88, CC	1931
	Marmon, 8 125, HH	1932
	Reo, 6, 20	1930
	Studebaker, President, 8	1928
	Studebaker, Com'der 8	1929
	Studebaker, President 8	1929
	Studebaker, President, 8	1929
	Studebaker, Dict , 8, FC	1930
	Studebaker, Com , 8, FD	1930
	Studebaker, Pres , 8, FH	1930
	Studebaker, Pres , 8, FE	1930
	Studebaker, Dict , 8 61	1931
	Studebaker, Com , 8 70	1931
	Studebaker, Dict , 8, 62	1932
	Studebaker Com , 8, 71	1932
	Studebaker, Comm , 8, 73	1933
	Studebaker, Pres 8, 82	1933
	Studebaker, Comm 8 B	1934
	Studebaker, Pres 8, C	1934
G 19	Continental Beacon	1933
	Continental Flyer	1933
G 20	Graham, Std 6	1933
	Graham Std 8	1933
	Graham, Cust 8	1933
G 21	Blackhawk, L6	1929
	Blackhawk, L6	1930
	Stutz, 6, LA	1931
	Stutz 6, LAA	1932
	Stutz, LAA6	1933
G 22	Chandler, 85 ..	1929
G 23	Packard, 12 1005, 1006	1933
	Packard, 12, 1107, 8	1934
G 24	Chrysler, 80L	1928
	Chrysler, Imp 6	1929
	Chrysler, Imp 6	1930
	Reo Mate, 6 B2	1929
	Reo Master, 6, C	1929
	Reo, 6, 15 .. .	1930
	Reo, 6, 25 ..	1930
	Reo, 6, 15 . .	1931
	Reo, 6, 20	1931
	Reo, 6, 25	1931
	Reo, 8, 30, 31	1931
	Reo 8, 35	1931
	Reo, 8, 31	1932
	Reo, 8, 35	1932
	Reo, Royale 8	1933
	Reo, Royale 8, N1, N2	1934
G 25	Erskine, 6 53	1930
	Studebaker, Standard 6	1927
	Studebaker, Dictator, 6	1928
	Studebaker, Dictator, 6	1929
	Studebaker, Com 6, GJ	1930
	Studebaker, 6 53	1930
	Studebaker, Dict , 6, GL	1930
G 26	Kissel 8 126	1929
	Kissel, 8 126	1930
G 27	Reo, Royale 8	1933
	Stearns Knight, H, 8 90	1929
	Stearns-Knight, J 8 90	1929
	Stearns Knight, H, 8 90	1930
	Stearns-Knight, J 8 90	1930
G 28	Erskine American, 6, 51	1928
	Erskine, 6, 52	1929
	Reo, 6 21 .	1932
	Reo, 8 21 .	1932
	Reo, 8 25	1932
	Windsor, 8 82	1929
	Windsor, 8 92	1929
G 30	Moon, 6 72	1929
	Peerless, 6 61A	1929
	Windsor, 6 72	1929
	Windsor, 6 77	1929
G 31	Buick, 116	1929
	Buick, 121 .	1929
	Buick 129	1929
	Buick, 40	1930
	Buick, 50	1930
	Buick, 60	1930
G 33	Chrysler, 75	1929
	Oldsmobile, 6 F28	1928
	Oldsmobile 6 F29	1929
	Oldsmobile, 6, F30	1930
G 34	Nash, 1070	1932
G 35	Peerless, 8, 125	1929
G 36	Duesenberg, J .	1929
	Duesenberg, J	1930
	Duesenberg, J	1931
	Duesenberg, J	1932
	Duesenberg, J 1933	
	Duesenberg, J ...	1934
G 37	Franklin, 130	1929
	Franklin, 135	1929
	Franklin, 137	1929
	Franklin, 145	1930
	Franklin, 147	1930
	Franklin 15	1931
	Franklin Olympic 18	1932
	Franklin, 16	1932
	Franklin, Olympic 6, 18B	1933
	Franklin, Airman 6, 16B	1933
	Franklin Olympic 6, 18	1934
	Franklin, Airman 6, 16	1934
G 38	Blackhawk L8	1929
	Blackhawk, L8	1930
G 39	Graham Paige, 612	1929
	Graham, Std 6	1930
G 40	Graham Paige, 615	1929
	Graham Spec 6	1930
	Graham, Std 8	1930
	Graham, Spec 8	1930
	Graham, Prosperity 6	1931
	Graham Std 6	1931
	Graham Spec 6	1931
	Graham, Spec 8	1931
	Graham, 6	1932
	Graham, 8 .	1932
G 41	Pierce Arrow, 125	1929
	Pierce Arrow, 126	1929
G 42	Graham Paige, 621	1929
	Graham Paige, 827	1929
	Graham Paige, 837	1929
	Graham, Cust 8 127	1930
	Graham, Cust 8 137	1930
	Graham, Cust 8	1931
G 43	Ford, A .	1928
G 44	Ford, A .. .	1929
G 45	Ford, A	1930
	Ford, A ...	1931
G 46	Ford, A . ..	1932
	Ford, B	1932
	Ford, V8	1932
	Ford, V8	1933
	Ford, V8, 40-34	1934
G 47	Nash 1080	1932
	Nash, 1090 ..	1932
G 49	Ford, T	1927
G 50	Lincoln, V8	1928
	Lincoln, V8	1929
	Lincoln, V8	1930
G 51	Peerless, Master 8 B	1931
	Peerless, Custom 8 C	1931
	Peerless, Master 8 B	1932
	Peerless, Custom 8, C	1932
G 52	Pierce Arrow, 6 36	1928
G 53	Willys Six, 97	1931
G 54	Pierce-Arrow, 6, 81	1928
G 55	Nash, Spec	1928
G 56	Nash, Adv 6	1928
G 57	Cadillac, V8, 341A	1928
	Cadillac, V8, 341B	1929
	Cadillac, V8, 353	1930
	Cadillac, V8, 355A	1931
	LaSalle, V8, 303	1928
	LaSalle V8, 328	1929
	LaSalle, V8, 340	1930
	LaSalle, V8, 345	1931
G 59	Packard, 6, 526	1928
	Packard, 6, 533	1928
G 60	Franklin, 11B	1927
	Franklin Airman, 12A B	1928
	Packard, 8, 443	1928
	Packard, 8, 626	1929
	Packard, 8, 633	1929
	Packard, 8, 640	1929
	Packard, 8, 645	1929
	Packard, 8, 726	1930
	Packard, 8, 733	1930
	Packard 8, 740	1930
	Packard, 8, 745	1930
G 61	Packard, 8, 826	1931
	Packard, 8, 833	1931
	Packard, 8, 840	1931
	Packard 8 845	1931
	Packard, 8, 901	1932
	Packard, 8, 902	1932
	Packard, 8 903	1932
	Packard 8 904	1932
	Packard 8 1001, 1002	1933
	Packard, Super 8, 1003, 1004	1933
	Packard, 8, 1100 1101, 1102	1934

	Packard, Super 8, 1103, 4, 5	1934
G 62	Packard, Twin 6	1932
G 63	Stutz, 8, BB	1928
	Stutz, 8, M	1929
	Stutz, 8, MA	1930
	Stutz, 8, MB	1930
	Stutz, 8, MA	1931
	Stutz, 8, MB	1931
	Stutz, 8, SV16	1932
	Stutz, 8, DV32	1932
	Stutz, SV16	1933
	Stutz, DV32	1933
	Stutz, 8, SV16	1934
	Stutz, 8, DV32	1934
G 65	Pierce-Arrow, 132, C	1930
G 66	Oakland, 8, 101	1930
	Oakland, 8	1931
	Pontiac, 8, 302	1932
G 68	Pierce-Arrow, 134, B	1930
	Pierce-Arrow, 139, B	1930
	Pierce-Arrow, 144, A	1930
	Pierce-Arrow, 43	1931
	Pierce-Arrow, 42	1931
	Pierce-Arrow, 41	1931
G 69	Buick, 8-50	1931
	Buick, 8-60	1931
	Buick, 8-80	1931
	Buick, 8-90	1931
	Buick, 32-50	1932
	Buick, 32-60	1932
	Buick, 32-80	1932
	Buick, 32-90	1932
G 70	Chrysler, 8, Std. CD	1930
	Chrysler, 8, CD	1931
	Chrysler, 6, CI	1932
	Chrysler, 8, CP	1932
	Chrysler, 6, CO	1933
	Chrysler, Royal 8, CT	1933
	Chrysler, Imp. 8, CQ	1933
	DeSoto, 8, CF	1930
	DeSoto, 6, SA	1931
	DeSoto, 8, CF	1931
	DeSoto, 6, SC	1932
	DeSoto, 6, SD	1933
	Dodge Bros., 6, DD	1930
	Dodge Bros., 6, DB	1930
	Dodge Bros., 6, DH	1931
	Dodge Bros., 8, DG	1931
	Dodge, 6, DL	1932
	Dodge, 8, DK	1932
	Dodge, 6, DP	1933
	Dodge, 8, DO	1933
	Dodge, 6, DR, DS	1934
	Plymouth, 4, PA	1931
	Plymouth, 4, PB	1932
	Plymouth, 6, PC	1932
	Plymouth, 6, PD	1933
G 71	Pierce-Arrow, 54	1932
	Pierce-Arrow, 53	1932
	Pierce-Arrow, 52	1932
	Pierce-Arrow, 51	1932
	Pierce-Arrow, 8, 36	1933
	Pierce-Arrow, 12, 36	1933
	Pierce-Arrow, 12, 42	1933
	Pierce-Arrow, 12, 47	1933
	Pierce-Arrow, 836A	1934
	Pierce-Arrow, 840A	1934
	Pierce-Arrow, 1240A	1934
	Pierce-Arrow, 1248A	1934
	Studebaker, Pres., 8	1931
	Studebaker, Pres., 8, 91	1932
	Studebaker, Spcl. Pres., 8, 92	1933
G 72	Cadillac, V16, 452	1930
	Cadillac, V12, 370A	1931
	Cadillac, V16, 452A	1931
G 73	Chrysler, Imp. 8, CG	1931
	Chrysler, Imp. 8, CH	1932
	Chrysler, Imp. Cust. 8, CL	1932
	Chrysler, Imp. Cust. 8, CL	1933
G 74	Marmon, 16	1931
	Marmon, 16	1932
	Marmon, 16	1933
G 75	Cadillac, V12, 370B	1932
	Cadillac, V16, 452B	1932
	Cadillac, V12, 370C	1933
	Cadillac, V16, 452C	1933
G 76	Cadillac, V8, 355B	1932
	Cadillac, V8, 355C	1933
	LaSalle, V8, 345B	1932
	LaSalle, V8, 345C	1933
G 77	Pontiac, 6, 402	1932
	Pontiac, 8, 601	1933
G 78	Oldsmobile, 6, F32	1932
	Oldsmobile, 8, L32	1932
G 79	Auburn, 12-160	1932
	Auburn, 12-161	1933
	Auburn, 12-165	1933
G 80	Franklin, 12, 17	1932
	Franklin, 12, 17B	1933
	Franklin, V12, 17	1934
G 81	Dodge Bros., 4, 124	1927
G 82	Dodge Bros., 4, 128	1928
G 83	Dodge Bros., Victory 6	1928
	Dodge Bros., Senior 6	1928
	Dodge Bros., Standard 6	1928
	Dodge Bros., Senior 6	1929
	Dodge Bros., Senior 6	1930
	Reo Wolverine, 6	1928
G 84	Graham-Paige, 614	1928
	Graham-Paige, 619	1928
	Graham-Paige, 629	1928
	Graham-Paige, 835	1928
G 85	Graham-Paige, 610	1928
G 86	Chrysler, 6	1931
	Dodge Bros., 6, DA	1929
	Dodge Bros., 8, DC	1930
G 87	Willys-Knight, 66B	1930
G 88	Lincoln, V12	1932
G 89	Lincoln, V8	1932
G 91	Locomobile, 86	1929
	Locomobile, 88	1929
G 92	Lincoln, V12-136	1933
	Lincoln, V12	1934
G 94	Lincoln, V12-145	1933
G 95	Essex, Super 6	1928
G 96	Hudson, Super 6	1928
	Hudson, Super 6	1929
G 98	Willys-Knight, 66B	1929
G 101	Hupmobile, 6, A, Century	1929
G 103	Hupmobile, 8, M, Century	1928
	Hupmobile, 8, M, Century	1929
G 105	Jordan, 6, E	1929
	Peerless, 6-81	1929
G 106	Willys-Knight, 66D	1931
	Willys-Knight, 95	1932
	Willys-Knight, 66D	1932
G 107	Jordan, 8, G	1929
	Jordan, 8, 90, G	1930
	Jordan, 8, 90, G	1931
G 108	Chandler, 75	1929
G 109	Hupmobile, 8, C	1930
	Hupmobile, 8, H	1930
	Hupmobile, 8, C	1931
	Hupmobile, 8, H	1931
	Hupmobile, 8, U	1931
	Hupmobile, 8, 221	1932
	Hupmobile, 8, 225	1932
	Hupmobile, 8, 226	1932
	Hupmobile, 8, 237	1932
	Hupmobile, 326	1933
	Hupmobile, 8, 426, I	1934
G 110	Durant, 75	1928
	Durant, Six, 70	1929
	Durant, 617	1930
G 111	Nash, Std. 6	1928
	Nash, Std. 6	1929
	Nash, Single 6	1930
	Nash, 6-60	1931
	Nash, 8-70	1931
	Nash, 960	1932
	Nash, 970	1932
	Nash, 1060	1932
	Nash, 1070	1932
	Nash, Spc. 8, 1170	1933
G 112	Whippet, 4, 96	1928
	Whippet, 4, 96A	1929
	Whippet, 4, 96A	1930
G 113	Willys-Knight, 56	1928
	Willys-Knight, 70A	1928
	Willys-Knight, 70B	1929
	Willys-Knight, 87	1930
	Willys-Knight, 70B	1930
G 114	Durant, 55	1928
	Durant, 65	1928
	Durant, Four, 4	1929
	Durant, Six, 60	1929
	Durant, Six, 66	1929
	Durant, 63	1930
G 115	Whippet, 6, 98	1928
	Whippet, 6, 98A	1929
G 116	Nash, Spec. 6	1929
G 117	Peerless, 6-61	1929
G 118	Hupmobile, 6, S, Century	1930
	Hupmobile, Cent. 6, S	1931
	Hupmobile, 6, 214	1932
	Hupmobile, 6, 216	1932
	Hupmobile, 321	1933
	Hupmobile, 6, 421, K	1934
	Hupmobile, 6, 421A	1934
G 119	Jordan, 8, 80, T	1930
	Jordan, 8, 80, T	1931
	Peerless, Std. 8, A	1930
	Peerless, Std. 8, A	1931
	Windsor, 6-69	1929
G 120	DeVaux, 6-75	1932
	Durant, 614	1930
	Durant, 6-10	1931
	Durant, 6-12	1931
	Durant, 6-14	1931
	Durant, 619	1931
	Continental Ace	1933
	Continental, 4-41	1934
G 121	Willys, 6, 98B	1930
	Willys Six, 98D	1931
	Willys, 8-80	1931
	Willys, 8-80D	1931
	Willys-Overland, 6-90	1932
	Willys-Overland, 8-88	1932
G 122	Hupmobile, Cent. 8, L	1931
	Hupmobile, 8, 218	1932
G 123	Essex, Greater 6	1932
	Hudson, 8	1932
	Hudson, 8	1933
G 124	Essex, Challenger, 6	1929
G 125	Essex, Challenger, 6	1930
	Essex, Challenger, 6	1931
	Hudson, Great 8	1930
	Hudson, 8	1931
G 126	Essex Terraplane, 6	1933
	Essex Terraplane, 8	1933
	Hudson, Super 6	1933
	Rockne, 6-65	1932
	Rockne, 6-75	1932
	Rockne, 6, 10	1933
	Studebaker, Dict. 6, A	1934
	Willys, 77	1933
	Willys, 77	1934
G 127	Nash, Adv. 6	1929
G 128	Nash, Twin Ign., 6	1930
G 129	Nash, Twin Ign., 8	1930
G 131	Peerless, Master 8, B	1930
	Peerless, Custom 8, C	1930
G 132	Hupmobile, 8, 222	1932
	Hupmobile, 322	1933
	Hupmobile, 8, 422, F	1934
	Hupmobile, 8, 427T	1934
G 133	Nash, 8-80	1931
	Nash, 8-90	1931
	Nash, 980	1932
	Nash, 990	1932
	Nash, Big 6, 1120	1933
	Nash, Std. 8, 1130	1933
	Nash, Adv. 8, 1180	1933
	Nash, Amb. 8, 1190	1933
	LaFayette, 6, 110	1934
	Nash, Big 6, 1220	1934
	Nash, Adv. 8, 1280	1934
	Nash, Amb. 8, 1290	1934
G 134	Austin, A	1931
	Austin, A	1932
G 135	Hupmobile, 6, A, Century	1928
G 139	Stearns-Knight, M, 6-80	1929
	Stearns-Knight, N, 6-80	1929
	Willys-Knight, 66A	1928
G 142	Star, 4, M	1928
G 144	Whippet, 4	1927
G 147	Whippet, 6	1927
G 157	Lincoln, V8	1931
G 160	Buick, 34-50	1934
	Buick, 34-60	1934
	Buick, 34-90	1934
G 161	Cadillac, V8, 355D	1934
	Cadillac, V12, 370D	1934
	Cadillac, V16, 452D	1934
G 162	Buick, 34-40	1934
	Chevrolet, Mast. 6, DA	1934
	Chrysler, 6, CA	1934
	Chrysler, 8, CU	1934
	Chrysler, Imp. 8, CV	1934
	Chrysler, Imp. Cust. 8, CX	1934
	DeSoto, 6, SE	1934
	Graham, Std. 6, 68	1934
	Graham, De Luxe 6, 68	1934
	LaSalle, 8, 350	1934
	Oldsmobile, 6, F34	1934
	Oldsmobile, 8, L34	1934
	Pontiac, 8, 603	1934
G 163	Graham, Spec. 8, 67	1934
	Graham, Std. 8, 67	1934
G 164	Graham, Super Spec. 8, 69S	1934
	Graham, Super Cust. 8, 69	1934
G 165	Plymouth, De Luxe 6, PE	1934
G 166	Auburn, Std. 6, 52X	1934
	Auburn, Cust. 6, 52Y	1934
	Auburn, Std. 8, 50X	1934
	Auburn, Cust. 8, 50Y	1934
G 167	Hudson, 8	1934
	Hupmobile, 6, 417W	1934
	Hupmobile, 6, 421J	1934
	Terraplane, 6	1934

Interchangeable Starting Motor Armatures

DIRECTIONS—All Starting Motor Armatures listed under one number, such as S2, are interchangeable. Also read directions at top of page 74.

S 2	Auburn, 115	1928
	Auburn, 120	1929
	Auburn, 125	1930
	Chevrolet, 4, AA	1927
	Chevrolet, 4, AB	1928
	Chevrolet, 6, AC	1929
	Chevrolet, 6, AD	1930
	Chevrolet, 6, AE	1931
	Chevrolet, 6, BA	1932
	Chevrolet, Std. 6, CC	1933
	Chevrolet, Mast. 6, CA	1933
	Chevrolet, Std. 6, DC	1934
	Chrysler, 52	1928
	Chrysler, 62	1928
	Chrysler, 65	1929
	DeSoto, 6, K	1929
	DeSoto, 6, CK	1930
	Elcar, 120	1929
	Gardner, 130	1929
	Gardner, 150	1930
	Gardner, 158	1931
	Graham-Paige, 615	1929
	Graham, Spec. 6	1930
	Kissel, 8, 126	1929
	Kissel, 8, 126	1930
	Marmon, 8, 68	1929
	Marmon, 8, Roosevelt	1930
	Marmon, 8-69	1930
	Marmon, 8-79	1930
	Marmon, Big 8-89	1930
	Marmon, 70	1931
	Marmon, 88, CC	1931
	Marmon, 8-125, HH	1932
	Moon, 6-72	1929
	Oakland, 6, 212	1928
	Oakland, AA6	1929
	Peerless, 6-61A	1929
	Plymouth, 4	1929
	Pontiac, 6-27	1927
	Pontiac, 6-28	1928
	Pontiac, 6-29	1929
	Reo, S	1932
	Reo, S	1933
	Reo, 6, S-4	1934
	Roosevelt	1929
	Roosevelt	1930
	Studebaker, Standard 6	1927
	Studebaker, Dictator, 6	1928
	Studebaker, Dictator, 6	1929
	Windsor, 6-72	1929
	Windsor, 6-77	1929
S 3	Studebaker, Special 6	1927
	Studebaker, Big 6	1927
	Studebaker, Com'der 6	1928
	Studebaker, Com'der 6	1929
S 4	Chandler, 65	1929
S 5	Graham-Paige, 612	1929
	Graham, Std. 6	1930
S 7	Auburn, 76	1928
	Auburn, 88	1928
	Auburn, 6-80	1929
	Auburn, 8-90	1929
	Auburn, 6-85	1930
	Auburn, 8-95	1930
	Auburn, 8-98	1931
	Auburn, 8-100	1932
	Blackhawk, L8	1929
	Blackhawk, L8	1930
	Cadillac, V8, 353	1930
	Cadillac, V8, 355	1931
	Cadillac, V8, 355B	1932
	Cadillac, V8, 355C	1933
	Cadillac, V8, 355D	1934
	Chandler, Big 6	1929
	Chandler, 85	1929
	Chrysler, 72	1928
	Chrysler, 80L	1928
	Chrysler, 75	1929
	Chrysler, Imp. 6	1929
	Chrysler, 77	1930
	Chrysler, Imp. 6	1930
	Chrysler, 70	1931
	Chrysler, 8, Std.	1930
	Chrysler, 8	1931
	Chrysler, Imp. 8, CG	1931
	Chrysler, 8, CP	1932
	Chrysler, Imp. 8, CH	1932
	Chrysler, Imp. Cust. 8, CL	1932
	Chrysler, Imp. Cust. 8, CL	1933
	Cord, 8, L-29	1930
	Cord, 8, L-30	1931
	Cord, 8, L-30	1932
	Dodge Bros., 8, DG	1931
	Dodge, 8, DK	1932
	Elcar, 75	1929
	Elcar, 95	1929
	Elcar, 96	1929
	Franklin, 130	1929
	Franklin, 135	1929
	Franklin, 137	1929
	Franklin, 145	1930
	Franklin, 147	1930
	Franklin, 15	1931
	Franklin Olympic	1932
	Franklin, 16	1932
	Franklin, Airman 6, 16B	1933
	Franklin, Olympic 6, 18B	1933
	Franklin, Olympic 6, 18	1934
	Franklin, Airman 6, 16	1934
	Gardner, 120	1929
	Gardner, 125	1929
	Gardner, 136	1930
	Gardner, 140	1930
	Gardner, 136	1931
	Gardner, 148	1931
	Kissel, 6, 73	1929
	Kissel, 8, 95	1929
	Kissel, 6, 73	1930
	Kissel, 8, 95	1930
	LaSalle, V8, 340	1930
	LaSalle, V8, 345	1931
	LaSalle, V8, 345B	1932
	LaSalle, V8, 345C	1933
	Pierce-Arrow, 125	1929
	Pierce-Arrow, 126	1929
	Pierce-Arrow, 132, C	1930
	Pierce-Arrow, 134, B	1930
	Pierce-Arrow, 139, B	1930
	Pierce-Arrow, 144, A	1930
	Pierce-Arrow, 43	1931
	Pierce-Arrow, 42	1931
	Pierce-Arrow, 41	1931
	Plymouth, 6	1932
	Reo Flying Cloud, 6, A	1928
	Reo Master, 6, C	1929
	Reo, 6, 20	1930
	Reo, 6, 25	1930
	Reo, 6, 20	1931
	Reo, 6, 25	1931
	Reo, 8, 30, 31	1931
	Reo, 8, 35	1931
	Reo, 6-21	1932
	Reo, 8-21	1932
	Reo, 8-25	1932
	Reo, 8, 31	1932
	Reo, 8, 35	1932
	Reo, Royale 8	1933
	Reo, Royale 8, N1, N2	1934
	Studebaker, President, 8	1928
	Studebaker, President, 8	1929
	Studebaker, President, 8	1929
	Studebaker, Pres., 8, FH	1930
	Studebaker, Pres., 8, FE	1930
	Studebaker, Pres., 8	1931
	Windsor, 8-82	1929
	Windsor, 8-92	1929
S 8	Buick, 115	1928
	Buick, 120	1928
	Buick, 128	1928
	Buick, 116	1929
	Buick, 121	1929
	Buick, 129	1929
	Buick, 40	1930
	Buick, 50	1930
	Buick, 60	1930
	Buick, 8-60	1931
	Buick, 8-80	1931
	Buick, 8-90	1931
	Buick, 32-60	1932
	Buick, 32-80	1932
	Buick, 32-90	1932
	Buick, 33-60	1933
	Buick, 33-80	1933
	Buick, 33-90	1933
	Studebaker, Com'der. 8	1929
	Studebaker, Dict., 6, GL	1930
	Studebaker, Dict., 8, FC	1930
	Studebaker, Com., 6, GJ	1930
	Studebaker, Com., 8, FD	1930
S 9	Blackhawk, L6	1929
	Blackhawk, L6	1930
	LaSalle, V8, 303	1928
	LaSalle, V8, 328	1929
	Nash, Spec. 6	1928
	Nash, Adv. 6	1928
	Stutz, 8, BB	1928
	Stutz, 8, M	1929
	Stutz, 8, MA	1930
	Stutz, 8, MB	1930
	Stutz, 6, LA	1931
	Stutz, 8, MA	1931
	Stutz, 8, MB	1931
	Stutz, 6, LAA	1932
	Stutz, 8, SV16	1932
	Stutz, 8, DV32	1932
	Stutz, LAA6	1933
	Stutz, SV16	1933
	Stutz, DV32	1933
	Stutz, 8, SV16	1934
	Stutz, 8, DV32	1934
S 10	Marmon, 8, 78	1929
S 11	Erskine American, 6, 51	1928
	Erskine, 6, 52	1929
	Erskine, 6, 53	1930
	Studebaker, 6, 53	1930
	Studebaker, 6, 54	1931
	Studebaker, 6, 55	1932
	Studebaker, 6, 56	1933
S 12	Chrysler, 66	1930
	Chrysler, 70	1930
	Chrysler, 66	1931
	Graham-Paige, 621	1929
	Graham-Paige, 827	1929
	Graham-Paige, 837	1929
	Graham, Std. 8	1930
	Graham, Spec. 8	1930
	Graham, Cust. 8, 127	1930
	Graham, Cust. 8, 137	1930
	Graham, Spec. 8	1931
	Graham, Cust. 8	1931
	Graham, 8	1932
	Graham, Std. 6	1933
	Graham, Std. 8	1933
	Graham, Cust. 8	1933
	Peerless, 8, 125	1929
	Viking, V29, V30	1930
S 13	Buick, 8-50	1931
	Buick, 32-50	1932
	Buick, 33-50	1933
	Buick, 34-40	1934
	Buick, 34-50	1934
	Buick, 34-60	1934
	Buick, 34-90	1934
	Chrysler, 6	1931
	Chrysler, 6, CI	1932
	Chrysler, 6, CO	1933
	Chrysler, Royal 8, CT	1933
	Chrysler, Imp. 8, CQ	1933
	Chrysler, 6, CA	1934
	Chrysler, 8, CU	1934
	Chrysler, Imp. 8, CV	1934
	Chrysler, Imp. Cust. 8, CX	1934
	DeSoto, 8, CF	1930
	DeSoto, 6, SA	1931
	DeSoto, 8, CF	1931
	DeSoto, 6, SC	1932
	DeSoto, 6, SD	1933
	DeSoto, 6, SF	1934
	Dodge Bros., 6, DD	1930
	Dodge Bros., 6, DB	1930
	Dodge Bros., 8, DC	1930
	Dodge Bros., 6, DH	1931
	Dodge, 6, DL	1932
	Dodge, 6, DP	1933
	Dodge, 8, DO	1933
	Dodge, 6, DR, DS	1934
	Graham, Prosperity 6	1931
	Graham, Std. 6	1931
	Graham, Spec. 6	1931
	Graham, 6	1932
	Graham, Std. 6, 68	1934
	Graham, De Luxe 6, 68	1934
	Graham, Spc. 8, 67	1934
	Graham, Super Spec. 8, 69S	1934
	Graham, Std. 8, 67	1934
	Graham, Super Custom 8, 69	1934
	LaSalle, 8, 350	1934
	Marquette, 6, 114-30	1930
	Oldsmobile, 6, F28	1928
	Oldsmobile, 6, F29	1929
	Oldsmobile, 6, F30	1930
	Oldsmobile, 6, F31	1931
	Oldsmobile, 6, F32	1932
	Oldsmobile, 8, L32	1932
	Oldsmobile, 6, F33	1933
	Oldsmobile, 8, L33	1933
	Oldsmobile, 6, F34	1934
	Oldsmobile, 8, L34	1934
	Plymouth, 4	1930
	Plymouth, 4	1931
	Plymouth, 4	1932
	Plymouth, 6, PD	1933
	Plymouth, 6, PF, PG	1934
	Plymouth, De Luxe 6, PE	1934
S 14	Oakland, 8, 101	1930
	Oakland, 8	1931
	Pontiac, 6-30	1930
	Pontiac, 6, 401	1931
	Pontiac, 6, 402	1932
	Pontiac, 8, 302	1932
S 15	Reo Mate, 6, B2	1929
	Reo, 6, 15	1930
	Reo, 6, 15	1931
S 16	Ford, A	1928
	Ford, A	1929
	Ford, A	1930
	Ford, A	1931
S 17	Auburn, 8-101	1933
	Auburn, 8-105	1933
S 18	Continental Beacon	1933
	Continental Flyer	1933
S 19	Essex, Terraplane 6	1933
S 20	Ford, A	1932

Ford, B 1932
Ford, V8 1932
Ford, V8 1933
Ford, V8, 40-34 1934

S 21 Essex, Terraplane 8 1933

S 22 Pontiac, 8, 601 1933

S 23 Ford, T 1927

S 24 Franklin, 11B 1927
Franklin Airman, 12AB 1928

S 26 Whippet, 4 1927
Whippet, 4, 96 1928
Whippet, 4, 96A 1929
Whippet, 4, 96A 1930

S 27 Nash, 1070 1932

S 28 Pierce-Arrow, 6, 36 1928

S 29 Willys, 77 1933
Willys, 77 1934
S 30 Nash, 1090 1932

S 31 Pierce-Arrow, 6, 81 1928

S 32 Nash, 1080 1932

S 33 Cadillac, V8, 341A 1928
Cadillac, V8, 341B 1929

S 34 Duesenberg, J 1929
Duesenberg, J 1930
Duesenberg, J 1931
Duesenberg, J 1932
Duesenberg, J 1933
Duesenberg, J 1934
Franklin, 12, 17 1932
Franklin, V12, 17B 1933
Franklin, V12, 17 1934

S 35 Auburn, 12-160 1932
Auburn, 12-161 1933
Auburn, 12-165 1933
Cadillac, V16, 452 1930
Cadillac, V12, 370 1931
Cadillac, V16, 452 1931
Cadillac, V12, 370B 1932
Cadillac, V16, 452B 1932
Cadillac, V12, 370C 1933
Cadillac, V16, 452C 1933
Cadillac, V12, 370D 1934
Cadillac, V16, 452D 1934

S 36 Studebaker, Dict., 8-61 1931
Studebaker, Com., 8-70 1931
Studebaker, Dict., 8, 62 1932
Studebaker, Com., 8, 71 1932
Studebaker, Com., 8, 73 1933
Studebaker, Pres., 8, 82 1933
Studebaker, Com., 8, B 1934
Studebaker, Pres., 8, C 1934

S 37 Marmon, 16 1931
Marmon, 16 1932
Marmon, 16 1933

S 38 Pierce-Arrow, 54 1932
Pierce-Arrow, 53 1932
Pierce-Arrow, 52 1932
Pierce-Arrow, 51 1932
Pierce-Arrow, 8, 36 1933
Pierce-Arrow, 12, 36 1933
Pierce-Arrow, 12, 42 1933
Pierce-Arrow, 12, 47 1933
Pierce-Arrow, 836A 1934
Pierce-Arrow, 840A 1934
Pierce-Arrow, 1240A 1934
Pierce-Arrow, 1248A 1934
Studebaker, Pres., 8, 91 1932
Studebaker, Spd. Pres. 8, 92.....1933

S 39 Dodge Bros., 4, 124 1927
Dodge Bros., 4, 128 1928
Dodge Bros., Victory 6 1928
Dodge Bros., 6, DA 1929
Dodge, Standard 6 1928
Graham-Paige, 614 1928
Reo Wolverine, 6 1928

S 40 Graham-Paige, 610 1928

S 41 Dodge Bros., Senior 6 1928
Dodge Bros., Senior 6 1929
Dodge Bros., Senior 6 1930
Graham-Paige, 619 1928
Graham-Paige, 629 1928
Graham-Paige, 835 1928
Willys-Knight, 66B 1930

S 43 Willys Six, 97 1931

S 44 Continental Ace 1933
Continental, 4-41 1934
DeVaux, 6-75 1932
Stearns-Knight, M, 6-80 1929
Stearns-Knight, N, 6-80 1929
Willys-Knight, 56 1928
Willys-Knight, 70A 1928
Willys-Knight, 66A 1928
Willys-Knight, 70B 1929
Willys-Knight, 87 1930
Willys-Knight, 70B 1930

S 45 Hupmobile, 8, C 1930
Hupmobile, 8, C 1931
Hupmobile, 8, 221 1932
Hupmobile, 8, 226 1932
Hupmobile, 326 1933
Peerless, Std. 8 1930
Peerless, Std. 8, A 1931
Willys, 8-80 1931
Willys-Knight, 66B 1929
Willys-Knight, 66D 1931
Willys-Knight, 66D 1932

S 46 Hupmobile, 321 1933
Hupmobile, 6, 417W 1934
Hupmobile, 6, 421K 1934
Hupmobile, 6, 421A 1934
Hupmobile, 6, 421-J 1934
Hupmobile, 8, 426I 1934
Nash, 8-80 1931
Nash, 980 1932
Nash, Adv. 8, 1180 1933
Nash, Adv. 8, 1280 1934

S 47 LaFayette, 6, 110 1934
Nash, Single 6 1930
Nash, 6-60 1931
Nash, 8-70 1931
Nash, 960 1932
Nash, 970 1932
Nash, 1060 1932
Nash, Big 6, 1120 1933
Nash, Std. 8, 1130 1933
Nash, Spc. 8, 1170 1933
Nash, Big 6, 1220 1934

S 48 Nash, 8-90 1931
Nash, Twin Ign., 8 1930
Nash, 990 1932
Nash, Amb. 8, 1190 1933
Nash, Amb. 8, 1290 1934

S 49 Hudson, 8 1931
Hudson, 8 1932
Hudson, 8 1933

S 50 Willys, 8-80D 1931
Willys-Overland, 8-88 1932

S 51 Hupmobile, 6, S, Century.....1930
Hupmobile, Cent. 6, S 1931

S 52 Lincoln, V12-136 1933

S 53 Peerless, 6-61 1929

S 54 Auburn, Std. 6, 52X 1934
Auburn, Cust. 6, 52Y 1934
Auburn, Std. 8, 50X 1934
Auburn, Cust. 8, 50Y 1934
Durant, 75 1928
Durant, Six, 70 1929
Durant, 617 1930

S 55 Nash, Spec. 6 1929
Nash, Adv. 6 1929

S 56 Chandler, 75 1929
Jordan, 6, E 1929
Peerless, 6-81 1929
Rockne, 6-75 1932
Windsor, 6-69 1929

S 57 Nash, Twin Ign., 6 1930

S 58 Hudson, Great 8 1930
Hupmobile, 8, M, Century 1929

S 59 Hupmobile, Cent. 8, L 1931
Hupmobile, 8, 218 1932
Hupmobile, 8, 222 1932
Hupmobile, 322 1933
Hupmobile, 8, 422F 1934
Hupmobile, 8, 427T 1934
Willys-Knight, 95 1932

S 60 Durant, 614 1930
Durant, 6-12 1931
Durant, 6-14 1931
Durant, 619 1931

S 61 Rockne, 6-65 1932
Rockne, 6, 10 1933
Studebaker, Dict, 6, A 1934
Willys, 6, 98B 1930

S 62 Durant, 6-10 1931
Hupmobile, 6, 214 1932
Hupmobile, 6, 216 1932

S 63 Essex, Challenger, 6 1931
Essex, Greater 6 1932
Hudson, Super 6 1933

S 64 Austin, A 1931
Austin, A 1932
Austin, A 1933
Austin, A 1934

S 65 Lincoln, V12-145 1933
Lincoln, V12 1934

S 68 Hupmobile, 8, M, Century 1928

S 69 Peerless, Master 8, B 1930
Peerless, Custom 8, C 1930
Peerless, Master 8, B 1931
Peerless, Custom 8, C 1931
Peerless, Master 8, B 1932
Peerless, Custom 8, C 1932

S 71 Nash, Std. 6 1928
Nash, Std. 6 1929

S 73 Hupmobile, 6, A, Century.....1928
Hupmobile, 6, A, Century.....1929

S 77 Whippet, 6 1927

S 78 Durant, 55 1928
Durant, Four, 4 1929
Star, 4, M 1928

S 79 Hupmobile, 8, H 1930
Hupmobile, 8, H 1931
Hupmobile, 8, U 1931
Hupmobile, 8, 225 1932
Hupmobile, 237 1932

S 82 Jordan, 8, G 1929
Jordan, 8, 80, T 1930
Jordan, 8, 90, G 1930
Jordan, 8, 80, T 1931
Jordan, 8, 90, G 1931

S 83 Hudson, Super 6 1928
Hudson, Super 6 1929

S 84 Durant, 65 1928
Durant, Six, 60 1929
Durant, Six, 66 1929
Durant, 63 1930

S 86 Whippet, 6, 98 1928
Whippet, 6, 98A 1929

S 87 Essex, Super 6 1928

S 89 Essex, Challenger, 6 1929

S 90 Willys Six, 98D 1931
Willys-Overland, 6-90 1932

S 91 Essex, Challenger, 6 1930

S 94 Locomobile, 86 1929
Locomobile, 88 1929

S 99 Stearns-Knight, H, 8-90.....1929
Stearns-Knight, J, 8-90.....1929
Stearns-Knight, H, 8-90.....1930
Stearns-Knight, J, 8-90.....1930

S 102 Lincoln, V8 1931
Lincoln, V8 1932

S 103 Lincoln, V12 1932

S 104 Packard, 8, 901 1932
Packard, 8, 902 1932
Packard, 8, 903 1932
Packard, 8, 904 1932

S 105 Packard, 8, 826 1931
Packard, 8, 833 1931

S 106 Packard, 8, 840 1931
Packard, 8, 845 1931

S 107 Packard, 6, 526 1928
Packard, 6, 533 1928
Packard, 8, 626 1929
Packard, 8, 633 1929
Packard, 8, 726 1930
Packard, 8, 733 1930
Packard, Super 8, 1003, 1004.....1933
Packard, 12, 1005, 1006 1933
Packard, Super 8, 1103, 4, 5.....1934
Packard, 12, 1107, 8 1934

S 108 Packard, 8, 443 1928
Packard, 8, 640 1929
Packard, 8, 645 1929
Packard, 8, 740 1930
Packard, 8, 745 1930
Packard, 8, 1001, 1002 1933
Packard, 8, 1100, 1, 2 1934

S 109 Packard, Twin 6 1932

S 110 Chevrolet, Mast. 6, DA 1934
Pontiac, 8, 603 1934

S 111 Hudson, 8 1934

S 112 Terraplane, 6 1934

Interchangeable Connecting-Rods

DIRECTIONS—All Connecting-Rods listed under one number, such as R16, are interchangeable When the letters L-R appear after the number, half the rods are interchangeable among themselves, and ditto the other half Also read directions at top of page 74.

R 1 L-R	Auburn, 8 98	1931
	Auburn 8 100	1932
	Auburn, 8 101	1933
	Auburn 8 105	1933
	Auburn, Std 6, 52X	1934
	Auburn, Cust 6 52Y	1934
	Auburn, Std 8 50X	1934
	Auburn, Cust 8, 50Y	1934
R 3	Franklin Airman 12AB	1928
	Franklin, 130	1929
R 4	Franklin 135	1929
	Franklin, 137	1929
R 5	Graham Paige 610	1928
	Graham Paige, 614	1928
R 6	Graham Paige, 619	1928
	Graham Paige 629	1928
	Graham Paige, 621	1929
R 8 L-R	Hudson, Super 6	1928
	Hudson, Super 6	1929
R 9	Hupmobile, 6, A, Century	1928
	Hupmobile, 6, A, Century	1929
R 10 L R	Buick, 33 50	1933
	Buick, 34 50	1934
R 11 L-R	Buick, 33 60	1933
	Buick, 34 60	1934
R 12	Hupmobile, 8 M, Century	1928
	Hupmobile, 8, M, Century	1929
R 15 L-R	Buick, 33 80	1933
	Buick, 33 90	1933
	Buick, 34 90	1934
R 16	Elcar, 75	1929
	Elcar, 95	1929
	Elcar, 96	1929
	Gardner, 120	1929
	Gardner 125	1929
	Gardner, 136	1930
	Gardner, 140	1930
	Gardner, 136	1931
	Gardner, 148	1931
R 17 L-R	Auburn, 76	1928
	Auburn, 88	1928
	Auburn 6 80	1929
	Auburn, 8 90	1929
R 18 L-R	Auburn, 115	1928
R 19 L-R	Gardner, 130	1929
	Gardner, 150	1930
	Gardner 158	1931
	Kissel 8 126	1929
	Kissel, 8, 126	1930
	Locomobile, 86	1929
	Locomobile, 88	1929
R 20	Chevrolet, St 6, CC	1933
	Chevrolet Mast 6 CA	1933
	Chevrolet, Mast 6, DA	1934
R 21 L-R	Marmon, 8, 78	1929
R 22	Marmon, 8, 68	1929
	Marmon 8 Roosevelt	1930
	Marmon 8 69	1930
	Marmon 70	1931
	Roosevelt	1929
	Roosevelt	1930
R 23	Nash, Spec 6	1928
R 24	Nash, Adv 6	1928
R 25	Nash, Std 6	1928
R 26	Nash, Std 6	1929
R 27	Nash Spec 6	1929
	Nash, Twin Ign , 6	1930
R 28	Nash, Adv 6	1929
R 31	Oldsmobile, 6, F28	1928
R 32	Oldsmobile 6, F29	1929
	Oldsmobile, 6, F30	1930
R 33	Packard, 8, 443	1928
R 34	Packard 8 640	1929
	Packard, 8, 645	1929
R 35	Packard, 8 626	1929
	Packard, 8, 633	1929
R 36 L-R	Dodge, 6, DP	1933
R 37	Oldsmobile, 6, F33	1933
R 38 L-R	Auburn, 120	1929
	Auburn, 125	1930
	Cord 8, L 29	1930
	Cord, 8 L 30	1931
	Cord, 8, L 30	1932
R 39	Oldsmobile, 8, L33	1933
	LaSalle, 8 350	1934
	Oldsmobile, 8 L34	1934
R 42	Reo Flying Cloud, 6, A	1928
R 43	Pontiac 8 601	1933
	Pontiac 8, 603	1934
R 45	Studebaker, 6, 56	1933
R 46	Studebaker Standard 6	1927
R 47	Studebaker Big 6	1927
	Studebaker, Commander 6	1928
R 48	Studebaker, President, 8	1928
R 49 L-R	Studebaker, President 8	1929
	Studebaker President 8	1929
	Studebaker, Pres , 8 FH	1930
	Studebaker, Pres , 8 FE	1930
R 50	Studebaker, Comm 8 73	1933
	Studebaker, Comm 8 B	1934
R 51	Stutz, 8, BB	1928
R 52	Stutz, 8, M	1929
R 53	Blackhawk, L6	1929
	Blackhawk L6	1930
	Stutz, 8 MA	1930
	Stutz, 8, MB	1930
	Stutz 6, LA	1931
	Stutz, 8 MA	1931
	Stutz, 8 MB	1931
	Stutz, 6, LAA	1932
	Stutz, 8, SV16	1932
	Stutz, 8 DV32	1932
	Stutz, LAA6	1933
	Stutz SV16	1933
	Stutz, DV32	1933
	Stutz, 8 SV16	1934
	Stutz, 8, DV32	1934
R 54	Willys 77	1933
	Willys, 77	1934
R 57 L-R	Whippet 4	1927
R 58	Whippet, 6	1927
R 59	Whippet 4 96	1928
	Whippet 4 96A	1929
	Whippet, 4 96A	1930
R 60	Duesenberg, J	1933
	Duesenberg J	1934
R 62	Willys Knight 66B	1929
	Willys Knight, 66A	1928
	Willys Knight, 66B	1930
	Willys Knight 66D	1931
	Willys Knight 66D	1932
	Stearns Knight M 6 80	1929
	Stearns Knight N, 6 80	1929
R 64	Willys Knight, 70B	1929
	Willys Knight 87	1930
	Willys Knight 70B	1930
	Willys Knight, 70A	1928
R 65	Willys Knight 56	1928
	Whippet 6, 98	1928
	Whippet, 6, 98A	1929
R 67	Ford, A	1928
R 68	Franklin Olympic	1932
	Franklin, 16	1932
	Franklin, Olympic 6, 18B	1933
	Franklin, Airman 6 16B	1933
	Franklin Olympic 6 18	1934
	Franklin, Airman 6, 16	1934
R 69	Graham Paige, 835	1928
R 70	Studebaker Com'der, 8	1929
	Studebaker Com , 8, FD	1930
	Studebaker, Com , 8 70	1931
R 71 L-R	Hupmobile, 8, 226	1932
R 72	Oakland, 6, 212	1928
R 73	Graham, 6	1932
	Graham Paige 612	1929
	Graham Paige 615	1929
	Graham, Std 6	1930
	Graham, Spec 6	1930
	Graham, Std 8	1930
	Graham, Spec 8	1930
	Graham, Prosperity 6	1931
	Graham, Std 6	1931
	Graham, Spec 6	1931
	Graham, Std 6	1933
	Graham Std 6 68	1934
	Graham, DeLuxe 6, 68	1934
R 74	Cadillac V8 341B	1929
	Cadillac V8 353	1930
	LaSalle, V8 328	1929
	LaSalle, V8, 340	1930
R 75	Viking, V29, V30	1930
R 76 L-R	Graham Paige, 827	1929
	Graham Paige, 837	1929
	Graham, Cust 8 127	1930
	Graham, Cust 8, 137	1930
R 78	Plymouth, 4	1929
	Plymouth, 4	1930
R 79	Dodge Bros , 6 DA	1929
	Dodge Bros , 6 DB	1930
R 80	Oakland, AA6	1929
R 81	Marquette, 6, 114 30	1930
R 82	Pierce Arrow 132, C	1930
	Pierce Arrow, 134, B	1930
	Pierce Arrow, 139, B	1930
R 83	Pierce Arrow, 6, 81	1928
R 84	Chrysler, 70	1930
	Chrysler, 66	1931
R 85	Chrysler, 66	1930
R 86	Chrysler, 77	1930
	Chrysler, 70	1931
R 87	Hupmobile, 6, S, Century	1930
R 88 L-R	Hupmobile, 8 C	1931
	Hupmobile, 8, 221	1932
R 89	Studebaker, Dict 8 FC	1930
	Studebaker, Dict , 8 61	1931
R 90	Erskine, 6 53	1930
	Studebaker 6 53	1930
	Studebaker, Dict , 6, GL	1930
R 92	Oakland, 8, 101	1930
R 94	Packard 8 726	1930
	Packard, 8 733	1930
	Packard, 8, 826	1931
	Packard, 8, 833	1931
R 95	Nash, Twin Ign , 8	1930
R 96	Nash, Single 6	1930
	Nash, 6 60	1931
	Nash, 960	1932
R 97	Reo Master, 6, C	1929
	Reo, 6, 21	1932
	Reo 6 20	1930
	Reo, 6, 25	1930
	Reo, 6 20	1931
	Reo, 6, 25	1931
R 98	Ford, A	1929
	Ford, A	1930
	Ford A	1931
	Ford, A	1932
R 99	Dodge Bros , 6, DD	1930
R 100	DeSoto 8 CF	1931
	Dodge Bros , 8, DC	1930
	Dodge Bros , 8, DG	1931
R 101 L-R	Hupmobile, 8, H	1930
	Hupmobile 8 H	1931
	Hupmobile, 8 U	1931
	Hupmobile 8 225	1932
	Hupmobile, 237	1932
R 102 L-R	Essex, Challenger 6	1930
	Essex Challenger, 6	1931
	Hudson, Great 8	1930
	Hudson, 8	1931
R 103 L-R	Continental Ace	1933
	Continental, 4 41	1934
	Durant, 614	1930
	Durant, 6 12	1931
	Durant 6 14	1931
	Durant 619	1931
	DeVaux, 6 75	1932
R 104	Franklin 145	1930
	Franklin 147	1930
R 105 L-R	Willys, 6, 98B	1930
R 106	Packard 8, 740	1930
	Packard 8 745	1930
	Packard 8 840	1931
	Packard, 8, 845	1931
R 107	DeSoto, 8, CF	1930
R 108	Packard, 6 526	1928
	Packard, 6, 533	1928
R 109	Kissel, 6, 73	1929
	Kissel 8 95	1929
	Kissel 6 73	1930
	Kissel, 8, 95	1930
R 110	Pontiac, 6 27	1927
	Pontiac, 6 28	1928
	Pontiac 6 29	1929
	Pontiac, 6 30	1930
	Pontiac, 6, 401	1931

R 111	Studebaker, Dictator, 6	1928
R 112 L-R	Rockne, 6 65	1932
R 113 L-R	Marmon, 8 79	1930
	Marmon, Big 8 89	1930
	Marmon, 88, CC	1931
	Marmon, 8 125, HH	1932
R 114 L-R	Auburn, 6 85 .	1930
	Auburn, 8 95	1930
R 115	Studebaker, Dictator, 6	1929
R 116	Plymouth, 4	1931
	Plymouth, 4	1932
R 117	Austin, A	1931
	Austin, A	1932
	Austin	1933
	Austin	1934
R 118 L-R	Buick, 8-50	1931
	Buick, 32 50	1932
R 119 L-R	Buick, 8 60	1931
	Buick, 32 60	1932
R 120 L-R	Buick, 8 80	1931
	Buick, 8 90	1931
	Buick 32 80	1932
	Buick, 32 90	1932
R 121	Oakland, 8	1931
	Pontiac, 8, 302	1932
R 122 L-R	Hupmobile, Cent 8, L	1931
	Hupmobile, 8, 218	1932
R 123 L-R	Willys, 8 80	1931
	Willys, 8 80D	1931
	Willys Overland, 8 88	1932
R 124	Studebaker, Com'der 6	1929
	Studebaker, Com , 6, GJ	1930
R 125	Nash, 8 70	1931
	Nash, 970	1932
R 126	Nash, 8 80	1931
	Nash, 980	1932
R 127	Nash, 8 90	1931
	Nash, 990	1932
	Nash, 1090	1932
	Nash, Amb 8, 1190	1933
	Nash, Amb 8, 1290	1934
R 128	Hupmobile, Cent 6, S	1931
	Hupmobile, 6, 214	1932
R 129	Reo, 8, 31	1932
	Reo, 8, 35	1932
	Reo, 8, 30, 31	1931
	Reo, 8, 35	1931
	Reo Royale 8	1933
	Reo, Royale 8, N1, N2	1934
R 130 L-R	Durant, 6 10	1931
R 131	Studebaker, Pres , 8	1931
R 132	Studebaker, 6 54	1931
R 134	Cadillac, V8, 355	1931
	Cadillac, V8, 355B	1932
	Cadillac, V8, 355C	1933
	LaSalle, V8, 345	1931
	LaSalle, V8, 345B	1932
	LaSalle V8, 345C	1933
	Cadillac, V8, 355D	1934
R 135	Cadillac, V16, 452	1930
	Cadillac, V12, 370	1931
	Cadillac, V16, 452	1931
	Cadillac, V12, 370B	1932
	Cadillac, V16, 452B	1932
	Cadillac, V12 370C	1933
	Cadillac, V16, 452C	1933
	Cadillac, V12, 370D	1934
	Cadillac, V16, 452D	1934
R 136 L-R	Chrysler 6	1931
	DeSoto, 6, SA	1931
	DeSoto, 6, SC	1932
	DeSoto 6 SD	1933
	Dodge Bros , 6, DII	1931
	Dodge, 6, DL	1932
R 137	Chrysler, 8, Std	1930
	Chrysler, 8	1931
R 138	Oldsmobile, 6, F31	1931
	Oldsmobile, 6, F32	1932
R 139	Pierce Arrow, 43	1931
	Pierce Arrow, 42	1931
	Pierce Arrow, 41	1931
R 140 L-R	Graham, Spec 8	1931
	Graham Cust 8	1931
	Graham, 8	1932
	Graham, Std 8	1933
	Graham, Cust 8	1933
	Graham, Spc 8, 67	1934
	Graham, Super Spc 8, 69S	1934
	Graham, Std 8, 67	1934
	Graham, Super Cust 8, 69	1934
R 142 L-R	Willys Six, 97	1931
	Willys Six, 98D	1931
R 143	Franklin, 15	1931
R 144 L-R	Chrysler, Imp 8, CG	1931
R 145 L-R	Reo, 8 21	1932
	Reo, 8 25	1932
R 146	Willys Knight, 95	1932
R 147	Studebaker, 6, 55	1932
R 148	Studebaker, Dict , 8, 62	1932
R 149	Studebaker, Com , 8, 71	1932
R 150	Studebaker, Pres , 8 91	1932
	Studebaker Pres , 8, 82	1933
	Studebaker, Spcl Pres , 8, 92	1933
R 151	Rockne, 6 75 .	1932
R 152	Chevrolet, 6, BA .	1932
R 153	Pontiac, 6, 402	1932
R 154	Oldsmobile, 8, L32	1932
R 155 L-R	Essex, Greater 6	1932
	Essex Terraplane 6	1933
	Essex Terraplane 8	1933
	Hudson, 8	1932
	Hudson, Super 6	1933
	Hudson, 8	1933
R 156 L-R	Hupmobile, 6 216	1932
	Hupmobile, 321	1933
	Hupmobile, 421K	1934
	Hupmobile, 421A	1934
R 157 L-R	Hupmobile, 8, 222	1932
R 158 L-R	Pierce Arrow, 53	1932
	Pierce Arrow, 52	1932
	Pierce Arrow, 51	1932
R 159 L-R	Dodge, 8, DK	1932
	Dodge, 8, DO	1933
R 160 L-R	Rockne, 6, 10	1933
R 161	Chandler, Big 6	1929
R 162	Auburn, 12 160	1932
	Auburn, 12 161	1933
	Auburn, 12 165	1933
R 163	Packard, 8 901	1932
	Packard, 8 902	1932
	Packard, 8, 1001, 1002	1933
R 164	Packard, 8 903	1932
	Packard, 8 904	1932
	Packard, Super 8, 1003, 1004	1933
R 165 L-R	Chrysler 6 CI	1932
	Chrysler 6, CO	1933
R 166 L-R	Chrysler, 8 CP	1932
	Chrylser, Royal 8, CT	1933
	Chrylser, Imp 8, CQ	1933
R 167	Nash, 1060	1932
R 168	Nash, 1070	1932
	Nash, Spc 8 1170	1933
R 169	Nash, 1080	1932
	Nash, Adv 8, 1180	1933
R 170	Ford B	1932
R 171	Reo S	1932
	Reo, S	1933
	Reo, 6, S 4	1934
R 173	Chrysler, 80L	1928
	Chrysler, Imp 6	1929
R 174	Elcar, 120	1929
R 177	Jordan, 8 80 T	1930
	Jordan, 8, 80, T	1931
R 179	Buick 120	1928
	Buick, 128	1928
R 180	Buick 121	1929
	Buick, 129	1929
	Buick, 50	1930
	Buick, 60	1930
R 181	Buick, 115	1928
R 182	Buick, 116	1929
	Buick, 40	1930
R 183	Cadillac, V8 341A	1928
	LaSalle, V8, 303	1928
R 184	Chandler, 65	1929
R 187	Chandler, 85	1929
R 188	Chandler, 75	1929
R 189	Chevrolet 4, AA	1927
	Chevrolet, 4, AB	1928
R 190	Chevrolet, 6, AC	1929
	Chevrolet 6 AD	1930
	Chevrolet, 6, AE	1931
R 191	Chrysler, 52	1928
R 192	Chrysler, 62	1928
R 193	Chrysler, 65	1929
R 195	Chrysler, 72	1928
	Chrysler, 75	1929
R 197	Chrysler, Imp 6	1930
R 198	Marmon, 16	1931
	Marmon, 16	1932
	Marmon, 16	1933
R 200	Erskine American, 6 51	1928
	Erskine, 6, 52	1929
R 201	Peerless, Master 8, B	1930
	Peerless, Custom 8, C	1930
	Peerless, Master 8, B	1931
	Peerless, Custom 8, C	1931
	Peerless Master 8, B	1932
	Peerless, Custom 8, C	1932
R 202	Blackhawk, L8	1929
	Blackhawk L8	1930
	Jordan, 8, G	1929
	Jordan, 8, 90, G	1930
	Jordan, 8, 90, G	1931
	Peerless, Std 8	1930
	Peerless Std 8, A	1931
	Windsor, 8 82	1929
	Windsor, 8 92	1929
R 203	Jordan, 6, E	1929
	Peerless, 6 81	1929
R 204	Durant, 55	1928
	Durant, 65	1928
	Durant, Six, 60	1929
	Durant Six 66	1929
	Durant, 63	1930
	Windsor, 6 69	1929
R 205	Stearns Knight, H, 8 90	1929
	Stearns Knight, J, 8 90	1929
	Stearns Knight H, 8 90	1930
	Stearns Knight, J, 8 90	1930
R 206	Moon, 6 72	1929
	Peerless, 6 61	1929
	Peerless, 6 61A	1929
	Reo Wolverine, 6	1928
	Reo Mate, 6 B2	1929
	Reo, 6, 15	1930
	Reo, 6 15	1931
	Windsor, 6 72	1929
	Windsor, 6 77	1929
R 207	Studebaker, Special 6	1927
R 208	Durant, 75	1928
	Durant, Six, 70	1929
	Durant, 617	1930
R 209	Star 4 M	1928
	Durant, Four, 4	1929
R 210	DeSoto 6 CK	1929
	DeSoto, 6 CK	1930
R 211	Dodge Bros , Victory 6	1928
	Dodge, Standard 6	1928
R 212	Dodge Bros , Senior 6	1928
	Dodge Bros , Senior 6	1929
	Dodge Bros , Senior 6	1930
R 213 L-R	Willys Overland, 6 90	1932
R 215 L-R	Essex Super 6	1928
	Essex Challenger, 6	1929
R 216	Ford, T	1927
R 217	Duesenberg, J	1929
	Duesenberg J	1930
	Duesenberg J	1931
	Duesenberg, J	1932
R 219 L-R	Hupmobile, 322	1933
	Hupmobile, 422F	1934
R 220	Dodge Bros , 4, 124	1927
	Dodge Bros , 4, 128	1928
R 221	Ford V8	1932
	Ford, V8	1933
	Ford V8, 40 34	1934
R 222 L-R	Hupmobile, 326	1933
	Hupmobile 8, 426I	1934
R 224	Nash, Big 6, 1120	1933
R 225	Nash, Std 8, 1130	1933
R 226 L-R	Packard, Twin 6	1932
	Packard 12, 1005, 1006	1933
R 227	Chrysler, Imp Cust 8, CL	1933
R 228	Lincoln, V8	1928
	Lincoln, V8	1929
	Lincoln V8	1930
	Lincoln, V8	1931
R 229	Chrysler, Imp 8 CH	1932
	Chrysler, Imp Cust 8, CL	1932
R 230 L-R	Lincoln, V8	1932
R 231 L-R	Lincoln V12	1932
	Lincoln, V12 136	1933
	Lincoln, V12 145	1933
	Lincoln, V12	1934
R 232	Pierce Arrow, 6, 36	1928
R 233 L-R	Plymouth, 6	1932
	Plymouth, 6, PD	1933
R 234	Pierce Arrow, 54	1932
R 235	Franklin, 12, 17B	1933
	Franklin, 12, 17	1932
	Franklin, 12, 17	1934
R 236	Pierce Arrow, 125	1929
	Pierce Arrow, 126	1929
R 237	Pierce Arrow, 144, A	1930
R 238	Pierce Arrow, 8 36	1933
	Pierce Arrow, 836A	1934
	Pierce Arrow, 840A	1934
R 239 L-R	Pierce Arrow, 12, 36	1933
	Pierce Arrow, 12, 42	1933
	Pierce Arrow, 12, 47	1933
	Pierce Arrow, 1240A	1934
	Pierce Arrow, 1248A	1934
R 240 L-R	Continental Beacon	1933
R 241 L-R	Continental Flyer	1933
R 242	Buick, 34 40	1934
R 243	Chevrolet, Std 6, DC	1934
R 244 L-R	Chrysler, 6 CA	1934
	DeSoto, 6, SE	1934
R 245 L-R	Chrysler, 8 CU	1934
	Chrysler, Imp 8 CV	1934
	Chrysler, Imp Cust 8, CX	1934
R 246 L-R	Dodge, 6, DS, DR	1934
R 247 L-R	Hudson, 8	1934
	Terraplane, 6	1934
R 248 L-R	Hupmobile, 417W	1934
R 249 L-R	Hupmobile, 6, 421J	1934
R 250 L-R	Hupmobile, 8, 427T	1934
R 251	LaFayette, 6, 110	1934
	Nash, Big 6, 1220	1934
R 252	Nash, Adv , 1280	1934
R 253	Oldsmobile, 6, F34	1934
R 254	Packard, 8, 1100, 1, 2	1934
R 255	Packard, Super 8, 1103, 4, 5	1934
R 256 L-R	Packard, 12, 1107, 8	1934
R 257 L-R	Plymouth, 6, PF PG	1934
	Plymouth De Luxe 6, PE	1934
R 258	Studebaker, Pres 8, C	1934
R 259 L-R	Studebaker, Dict. 6, A	1934

Interchangeable Rear Axle Shafts

DIRECTIONS—All Rear Axle Shafts listed under one number, such as A6, are interchangeable When the letters R-L appear after the number the right axle shaft is different from the left Also read directions at top of page 74

A 1	Peerless, 6-61 ..	1929
A 3	Austin A	1931
	Austin, A	1932
	Austin	1933
	Austin	1934
A 4	Buick, 115	1928
A 6	Buick, 121	1929
	Buick 129	1929
	Buick 60	1930
	Buick 8 80	1931
	Buick, 8 90	1931
	Buick, 32 80	1932
	Buick, 32 90	1932
A 7	Buick, 8 50	1931
A 8	Buick, 32 50	1932
A 9 R-L	Lincoln, V8	1928
	Lincoln V8	1929
	Lincoln, V8	1930
A 11 R-L	LaSalle, V8, 303	1928
A 12 R-L	LaSalle, V8, 328	1929
A 13 R-L	Cadillac, V8 341A	1928
	Cadillac, V8, 341B	1929
A 14 R-L	Cadillac, V8 353	1930
	Cadillac, V16, 452	1930
	Cadillac, V8 355	1931
	Cadillac, V12 370	1931
	Cadillac V16, 452	1931
	LaSalle, V8, 340	1930
	LaSalle, V8, 345	1931
A 15 R-L	Cadillac, V8 355B	1932
	Cadillac, V12, 370 B	1932
	Cadillac, V16, 452B	1932
	Cadillac, V8, 355C	1933
	Cadillac, V12 370C	1933
	Cadillac, V16 452C	1933
	Cadillac V8 355D	1934
	Cadillac V12, 370D	1934
	Cadillac V16, 452D	1934
	LaSalle V8 345B	1932
	LaSalle V8 345C	1933
A 16	Auburn, 125	1930
A 17	Chrysler, 6, CI	1932
A 18	Chrysler Imp 8 CG	1931
	Chrysler, Imp Cust 8, CL	1933
A 19	Auburn, 76	1928
A 20	Auburn, 88	1928
	Auburn, 115	1928
	Gardner, 120	1929
	Gardner, 125	1929
A 21	Auburn, 6 80	1929
	Auburn 8 90	1929
	Gardner, 136	1930
	Jordan, 8, 80, T	1930
	Jordan 8 80 T	1931
	Jordan, 6, E	1929
A 22	Windsor, 6 72	1929
	Windsor 6 77	1929
	Graham Paige, 612	1929
A 23	Gardner 136	1931
	Gardner, 140	1930
	Gardner, 148	1931
A 24	Auburn 120	1929
	Kissel, 6, 73	1929
	Moon, 6 72	1929
	Peerless 6 61A	1929
	Peerless 6 81	1929
	Windsor 6 69	1929
	Windsor, 8 82	1929
	Windsor, 8 92	1929
A 25	Gardner 130	1929
	Gardner 150	1930
	Gardner, 158	1931
A 26	Jordan 8, G	1929
	Jordan 8 90, G	1930
	Jordan, 8, 90 G	1931
A 27	Dodge Bros , 6 DB	1930
A 28	Auburn, 6 85	1930
A 29	Auburn 8 95	1930
	Auburn, 8 98	1931
	Auburn 8 100	1932
	Auburn 12 160	1932
A 30	Graham Paige, 619	1928
	Graham Paige 629	1928
	Graham Paige 835	1928
	Graham Paige 621	1929
	Graham Paige 827	1929
	Graham Paige, 837	1929
A 31	Graham Paige, 610	1928
A 32	Graham, Std 6	1930
A 33	Graham, Std 8	1930
	Graham, Spec 8	1930
	Graham, Cust 8 127	1930
	Graham Cust 8 137	1930
	Graham, Spec 8	1931
	Graham Cust 8	1931
A 34	Graham, Std 6	1931
A 35	Chandler, 85	1929
	Chandler Big 6	1929
A 36	Hudson, 8	1932
A 37	Chrysler, 52	1928
A 38	Chrysler, 62	1928
	Chrysler 72	1928
	Chrysler, 65	1929
A 39	Chandler 65	1929
	Chandler, 75	1929
A 40	Hupmobile, Cent 6 S	1931
	Hupmobile, Cent 8, L	1931
A 41	Chrysler, 75	1929
A 42	Chrysler, 66	1930
	Chrysler, 66	1931
	Chrysler, 6	1931
	DeSoto, 6, K	1929
	DeSoto 6 CK	1930
	DeSoto, 8 CF	1930
	DeSoto, 6 SA	1931
	DeSoto, 8 CF	1931
	DeSoto 6, SC	1932
	Plymouth, 4	1929
	Plymouth, 4	1930
	Plymouth 4	1931
	Plymouth 4	1932
	Plymouth, 6	1932
A 43 R-L	Chrysler 80L	1928
	Chrysler, Imp 6	1929
	Chrysler, Imp 6	1930
A 44 R-L	Chrysler 70	1930
	Chrysler 70	1931
	Chrysler, 77	1930
A 45 R-L	Chrysler, Imp 8 CH	1932
	Chrysler, Imp Cust 8, CL	1932
A 46 R-L	Chrysler, Imp 8 CQ	1933
	Chrysler, Imp 8 CV	1934
	Chrysler Imp Cust 8 CX	1934
	Dodge 8, DK	1932
A 47	Chevrolet, 4 AA	1927
	Chevrolet 4 AB	1928
	Chevrolet 6 AC	1929
	Pontiac, 6 27	1927
	Pontiac, 6 28	1928
A 48	Chevrolet, 6, AD	1930
	Chevrolet, 6, AE	1931
A 49	Chevrolet, 6, BA	1932
A 50	Dodge Bros , 4, 124	1927
A 51	Dodge Standard 6	1928
	Dodge Bros , 4 128	1928
	Dodge Bros Victory 6	1928
A 52	Dodge Bros , Senior 6	1928
A 53	Dodge Bros Senior 6	1929
	Dodge Bros , Senior 6	1930
A 54	Dodge Bros , 6, DA	1929
A 55 R-L	Chrysler, 8, Std	1930
	Chrysler 8	1931
	Chrysler 8 CP	1932
	Dodge Bros , 6, DD	1930
	Dodge Bros 8 DC	1930
	Dodge Bros , 6 DH	1931
	Dodge Bros 8 DG	1931
	Dodge, 6, DL	1932
A 56	Durant, 55	1928
	Durant, 65	1928
	Durant Four, 4	1929
	Durant, Six 60	1929
	Durant Six, 66	1929
	Durant 63	1930
	Star 4 M	1928
A 57	Durant, 75	1928
	Durant Six, 70	1929
A 58	Durant, 614	1930
	Durant 617	1930
	Durant, 6 10	1931
	Durant 6 12	1931
	Durant, 6 14	1931
	Durant 619	1931
	Elcar, 75	1929
A 59	DeVaux, 6 75	1932
A 60	Essex, Super 6	1928
	Essex, Challenger, 6	1929
A 61	Hudson,,Great 8	1930
A 62	Essex, Challenger, 6	1930
A 63	Essex, Challenger, 6	1931
	Hudson, 8	1931
A 64	Essex, Greater 6	1932
A 65	Ford, T	1927
A 66	Ford, A	1928
	Ford, A	1929
	Ford, A	1930
	Ford, A	1931
	Ford, A	1932
	Ford, B	1932
	Ford V8	1932
A 68	Franklin Airman, 12AB	1928
A 69	Franklin 145	1930
	Franklin 147	1930
	Franklin, 15	1931
A 70	Franklin, 130	1929
	Franklin 135	1929
	Franklin, 137	1929
A 71	Franklin, 16	1932
	Franklin Airman 6 16B	1933
	Franklin, Airman 6, 16	1934
A 72	Franklin 12 17	1932
	Franklin 12 17B	1933
	Franklin, V12, 17	1934
A 72 R-L	Nash, 1090	1932
	Nash 1090	1932
A 73	Buick, 8 60	1931
	Buick, 32 60	1932
A 74	Packard 8 826	1931
	Packard, 8, 833	1931
A 75	Reo Master, 6 C	1929
	Reo, 6, 20	1930
	Reo, 6 25	1930
	Reo, 6 20	1931
	Reo 6, 25	1931
	Reo, 6 21	1932
	Reo, 8 21	1932
	Reo, 8 25	1932
A 79	Hupmobile 8 M Century	1928
	Hupmobile, 8, M Century	1929
A 80	Hupmobile 6 A Century	1928
	Hupmobile, 6 A, Century	1929
	Hupmobile, 6, S, Century	1930
A 81	Auburn, 8 101	1933
	Auburn, 8 105	1933
	Auburn, Std 6 52X	1934
	Auburn, Cust 6 52Y	1934
	Auburn Std 8 50X	1934
	Auburn, Cust 8, 50Y	1934
A 82	Hupmobile 8, C	1930
	Hupmobile, 8, C	1931
	Hupmobile 8 221	1932
	Hupmobile 8 222	1932
	Hupmobile, 8, 226	1932
A 83	Hupmobile, 8 H	1930
	Hupmobile 8 H	1931
	Hupmobile 8, U	1931
	Hupmobile 8 225	1932
	Hupmobile, 237	1932
A 84	Hudson Super 6	1928
	Hudson, Super 6	1929
A 87	Auburn 12 161	1933
	Auburn, 12 165	1933
A 89	Locomobile 86	1929
	Locomobile, 88	1929
A 90	Marquette, 6, 114 30	1930
A 91	Buick 33 50	1933
	Buick, 34 50	1934
A 92	Marmon, 8, 78	1929
A 93	Buick 33 60	1933
	Buick 34 60	1934
A 94	Marmon, 16	1931
	Marmon, 16	1932
A 95	Buick 33 80	1933
	Buick 33 90	1933
	Buick, 34 90	1934
A 96	Nash, Spec 6	1928
	Nash Adv 6	1928
	Nash Spec 6	1929
	Nash, Adv 6	1929
	Nash Twin Ign , 6	1930

A 97	Nash, Std. 6	1928
	Nash, Std. 6	1929
A 98	Nash, Single 6	1930
A 99	Nash, Twin Ign., 8	1930
A 100	Nash, 6-60	1931
	Nash, 8-70	1931
	Nash, 8-80	1931
	Nash, 1080	1932
	Nash, 960	1932
	Nash, 970	1932
	Nash, 980	1932
A 101	Nash, 8-90	1931
	Nash, 990	1932
	LaFayette, 6, 110	1934
A 102 R-L	Nash, 1060	1932
	Nash, 1070	1932
	Nash, Big 6, 1120	1933
	Nash, Std. 8, 1130	1933
	Nash, Spc. 8, 1170	1933
	Nash, Big 6, 1220	1934
A 103	Oakland, 6, 212	1928
	Oakland, AA6	1929
	Oakland, 8, 101	1930
	Oakland, 8	1931
	Pontiac, 6-29	1929
	Pontiac, 6-30	1930
	Pontiac, 6, 401	1931
	Pontiac, 6, 402	1932
	Pontiac, 8, 302	1932
A 104	Whippet, 4	1927
	Whippet, 6	1927
A 105	Willys-Knight, 56	1928
	Willys-Knight, 66A	1928
A 106	Willys-Knight, 70A	1928
A 107	Whippet, 4, 96	1928
	Whippet, 4, 96A	1929
	Whippet, 4, 96A	1930
A 108	Whippet, 6, 98	1928
	Whippet, 6, 98A	1929
	Willys, 6, 98B	1930
A 109	Willys-Knight, 70B	1929
	Willys-Knight, 87	1930
	Willys-Knight, 70B	1930
A 110	Stearns-Knight, M, 6-80	1929
	Stearns-Knight, N, 6-80	1929
	Willys-Knight, 66B	1929
	Willys-Knight, 66B	1930
	Willys-Knight, 66D	1931
	Willys-Knight, 66D	1932
A 111	Willys, 8-80	1931
	Willys, 8-80D	1931
	Willys-Overland, 8-88	1932
A 112	Willys Six, 97	1931
	Willys Six, 98D	1931
	Willys-Knight, 95	1932
	Willys-Overland, 6-90	1932
A 113	Chevrolet, Mast. 6, CA	1933
	Chevrolet, Std. 6, DA	1934
	Chevrolet, Master 6, DA	1934
A 114	Buick, 120	1928
	Buick, 128	1928
A 115	Oldsmobile, 6, F28	1928
	Oldsmobile, 6, F29	1929
	Oldsmobile, 6, F30	1930
	Oldsmobile, 6, F31	1931
A 116	Buick, 116	1929
	Buick, 40	1930
	Buick, 50	1930
	Viking, V29, V30	1930
A 117	Oldsmobile, 6, F32	1932
	Oldsmobile, 8, L32	1932
A 118	Chrysler, 6, CO	1933
	Chrysler, 6, CA	1934
	DeSoto, 6, SE	1934
A 119	Chrysler, Royal 8, CT	1933
	Chrysler, 8, CU	1934
A 120	Packard, 8, 626	1929
	Packard, 8, 633	1929
	Packard, 8, 640	1929
	Packard, 8, 645	1929
	Packard, 8, 740	1930
	Packard, 8, 745	1930
A 121	Packard, 6, 526	1928
	Packard, 6, 533	1928
	Packard, 8, 443	1928
A 122	Packard, 8, 840	1931
	Packard, 8, 845	1931
A 123	Packard, 8, 726	1930
	Packard, 8, 733	1930
A 124	Packard, 8, 901	1932
	Packard, 8, 902	1932
A 125	Packard, 8, 903	1932
	Packard, 8, 904	1932
	Packard, Twin 6	1932
A 126	Elcar, 120	1929
A 127	Marmon, 8, 68	1929
A 128	Marmon, 8, Roosevelt	1930
	Marmon, 70	1931
	Roosevelt	1929
	Roosevelt	1930
A 129	Graham, Spec. 6	1930
	Graham-Paige, 615	1929
A 131	DeSoto, 6, SD	1933
A 133	Peerless, 8, 125	1929
A 134	Pierce-Arrow, 6, 36	1928
A 135	Pierce-Arrow, 43	1931
	Pierce-Arrow, 42	1931
	Pierce-Arrow, 41	1931
A 136	Pierce-Arrow, 54	1932
	Pierce-Arrow, 53	1932
	Pierce-Arrow, 52	1932
	Pierce-Arrow, 51	1932
	Pierce-Arrow, 836	1933
	Pierce-Arrow, 1236	1933
	Pierce-Arrow, 1242	1933
	Pierce-Arrow, 1247	1933
A 138	Elcar, 95	1929
	Elcar, 96	1929
	Graham-Paige, 614	1928
	Reo Wolverine, 6	1928
A 139	Reo Flying Cloud, 6, A	1928
A 140	Dodge, 6, DP	1933
	Dodge, 6, DR, DS	1934
	Plymouth, 6, PD	1933
	Plymouth, 6, PF, PG	1934
	Plymouth De Luxe 6, PF	1934
A 141	Reo Mate, 6, B2	1929
	Reo, 6, 15	1930
	Reo, 6, 15	1931
A 142	Reo, 8, 30, 31	1931
	Reo, 8, 35	1931
	Reo, 8, 31	1932
	Reo, 8, 35	1932
	Reo, Royale 8	1933
	Reo, Royale 8, N1, 2	1934
A 143	Franklin, Olympic	1932
	Franklin, Olym. 6, 18B	1933
	Franklin, Olym. 6, 18	1934
	Reo, S	1932
	Reo, S	1933
	Reo, 6, S-4	1934
A 144	Studebaker, Special 6	1927
	Studebaker, Big 6	1927
A 145	Studebaker, Standard 6	1927
	Studebaker, Dictator 6	1928
A 146	Erskine American, 6, 51	1928
	Erskine, 6, 52	1929
A 147	Studebaker, Pres., 8, 91	1932
	Studebaker, Spc. Pres., 8, 92	1933
A 148	Studebaker, Commander, 6	1928
	Studebaker, President, 8	1928
	Studebaker, Commander, 8	1929
	Studebaker, President, 8	1929
A 149	Studebaker, Dictator, 6	1929
	Studebaker, Commander, 6	1929
	Studebaker, Com., 6, GJ	1930
A 150	Erskine, 6, 53	1930
	Studebaker, 6, 53	1930
	Studebaker, Dict., 6, GL	1930
	Studebaker, Dict., 8, FC	1930
	Studebaker, 6, 54	1931
	Studebaker, Dict., 8-61	1931
A 151	Pierce-Arrow, 125	1929
	Pierce-Arrow, 126	1929
	Pierce-Arrow, 132, C	1930
	Pierce-Arrow, 134, B	1930
	Pierce-Arrow, 139, B	1930
	Pierce-Arrow, 144, A	1930
	Pierce-Arrow, 836, A	1934
	Pierce-Arrow, 840, A	1934
	Pierce-Arrow, 1240, A	1934
	Pierce-Arrow, 1248, A	1934
	Studebaker, Pres., 8, FH	1930
	Studebaker, Pres., 8, FE	1930
	Studebaker, Pres., 8	1931
A 152	Studebaker, Com. 8, 71	1932
	Studebaker, Pres. 8, 82	1933
	Studebaker, Pres. 8, C	1934
A 153	Studebaker, Com., 8-70	1931
	Studebaker, Com., 8, FD	1930
	Studebaker, 6, 56	1933
	Studebaker, Com. 8, 73	1933
	Studebaker, Com. 8, B	1934
A 154	Rockne, 6-75	1932
	Studebaker, 6, 55	1932
	Studebaker, Dict., 8, 62	1932
A 155	Marmon, 8-69	1930
A 156	Marmon, 8-79	1930
	Marmon, 8-125, HH	1932
A 157	Marmon, Big 8-89	1930
	Marmon, 88, CC	1931
A 158	Graham, Prosperity 6	1931
A 159	Graham, 6	1932
	Graham, Spec. 6	1931
A 160	Hupmobile, Cent. 8, L	1931
	Hupmobile, 6, 214	1932
	Hupmobile, 6, 216	1932
	Hupmobile, 8, 218	1932
	Hupmobile, 417W	1934
A 161	Graham, 8	1932
	Graham, Std. 6	1933
	Graham, Std. 8	1933
	Graham, Cust. 8	1933
	Graham, Std. 6, 68	1934
	Graham, De Luxe 6, 68	1934
	Graham, Special 8, 67	1934
	Graham, Supchgd. Spc. 8, 69S.	1934
	Graham, Std. 8, 67	1934
	Graham, Supchgd. Cust. 8, 69.	1934
A 162	Blackhawk, L6	1929
	Blackhawk, L8	1929
	Blackhawk, L6	1930
	Blackhawk, L8	1930
	Stutz, 6, LA	1931
	Stutz, 6, LAA	1932
	Stutz, 8, SV16	1932
	Stutz, 8, DV32	1932
	Stutz, 2AA6	1933
	Stutz, SV16	1933
	Stutz, DV32	1933
	Stutz, 8, SV16	1934
	Stutz, 8, DV32	1934
A 163	Dodge, 8, DO	1933
A 164	Essex Terraplane, 6	1933
	Essex Terraplane, 8	1933
	Hudson, Super 6	1933
	Hudson, 8	1933
	Hudson, 8	1934
	Terraplane, 6	1934
A 165	Stutz, 8, BB	1928
	Stutz, 8, M	1929
	Stutz, 8, MA	1930
	Stutz, 8, MB	1930
	Stutz, 8, MA	1931
	Stutz, 8, MB	1931
A 166	Stearns-Knight, H, 8-90	1929
	Stearns-Knight, J, 8-90	1929
	Stearns-Knight, H, 8-90	1930
	Stearns-Knight, J, 8-90	1930
A 167 R-L	Lincoln, V8	1932
	Lincoln, V12	1932
	Lincoln, V12-136	1933
	Lincoln, V12-145	1933
	Lincoln, V12	1934
A 168	Lincoln, V8	1931
A 170	Kissel, 8, 95	1929
	Kissel, 8, 126	1929
	Kissel, 6, 73	1930
	Kissel, 8, 95	1930
	Kissel, 8, 126	1930
	Pierce-Arrow, 6, 81	1928
A 171	Ford, V8	1933
	Ford, V8, 40-34	1934
A 172	Hupmobile, 322	1933
	Hupmobile, 326	1933
	Hupmobile, 8, 422F	1934
	Hupmobile, 8, 426I	1934
	Hupmobile, 8, 427T	1934
A 173	Hupmobile, 321	1933
	Hupmobile, 6, 421K	1934
	Hupmobile, 6, 421A	1934
	Hupmobile, 6, 421J	1934
A 174	Nash, Adv. 8, 1180	1933
	Nash, Adv. 8, 1280	1934
A 175	Nash, Amb. 8, 1190	1933
	Nash, Amb. 8, 1290	1934
	LaSalle, 8, 350	1934
A 176	Oldsmobile, 6, F33	1933
	Oldsmobile, 8, L33	1933
	Oldsmobile, 6, F34	1934
	Oldsmobile, 8, L34	1934
A 177 R-L	Packard, 8, 1001, 1002	1933
	Packard, Super 8, 1003, 1004	1933
	Packard, 8, 1100, 1, 2	1934
	Packard, Super 8, 1103, 4, 5	1934
A 178	Packard, 12, 1005, 1006	1933
	Packard, 12, 1107, 8	1934
A 179	Pontiac, 8, 601	1933
A 180	Rockne, 6, 10	1933
	Studebaker, Dict. 6, A	1934
A 181	Willys, 77	1933
	Willys, 77	1934
A 183 R-L	Duesenberg, J	1929
	Duesenberg, J	1930
	Duesenberg, J	1931
	Duesenberg, J	1932
	Duesenberg, J	1933
	Duesenberg	1934
A 184	Marmon, 16	1933
A 185	Continental Beacon	1933
	Continental Flyer	1933
A 186	Continental Ace	1933
	Continental, 4-41	1934
A 187	Peerless, Custom, 8, C	1930
	Peerless, Custom 8, C	1931
	Peerless, Custom 8, C	1932
A 188	Peerless, Master 8, B	1931
	Peerless, Master 8, B	1930
	Peerless, Master 8, B	1932
A 189	Peerless, Std. 8	1930
	Peerless, Std. 8, A	1931
A 190	Rockne, 6-65	1932
A 191	Chevrolet, Std. 6, CC	1933
A 195	Buick, 34-40	1934
	Pontiac, 8, 603	1934

Interchangeable Bevel Ring Gears and Pinions

DIRECTIONS—All Bevel Ring Gears and Pinions listed under one number, such as P5, are interchangeable. Some of the parts shown as interchangeable may have different splines for the axle shafts which can easily be altered to fit the cars shown under that number. Also read directions at top of page 74.

P 1 Ford, T 1927

P 2 Dodge Bros., 6, DA 1929
Dodge Bros., Senior 6 1929
Dodge Bros., Senior 6 1930

P 3 Durant, 6-10 1931
Durant, 619 1931

P 4 Nash, Spec. 6 1928
Nash, Spec. 6 1929

P 5 Lincoln, V8 1928
Lincoln, V8 1929
Lincoln, V8 1930
Lincoln, V8 1931
Lincoln, V8 1932
Lincoln, V12 1932
Lincoln, V12-136 1933
Lincoln, V12-145 1933
Lincoln, V12 1934

P 6 Windsor, 8-82 1929

P 7 Essex, Challenger, 6 1929

P 8 Marmon, 8, 68 1929
Marmon, 8, 78 1929

P 9 Marmon, 8, Roosevelt 1930

P 10 Dodge Bros., 4, 124 1927

P 11 Marmon, 8-69 1930

P 12 Nash, Twin Ign., 6 1930

P 13 Nash, 8-80 1931

P 14 Studebaker, Standard 6 1927

P 15 Studebaker, Special 6 1927
Studebaker, Big 6 1927

P 17 Kissel, 8, 95 1929
Kissel, 8, 95 1930
Gardner, 120 1929

P 18 Oakland, 8, 101 1930

P 19 Whippet, 6 1927

P 21 Buick, 115 1928

P 22 Chrysler, 62 1928

P 23 Oakland, AA6 1929

P 24 Nash, Std. 6 1928
Nash, Std. 6 1929

P 25 Chandler, 75 1929
Chandler, 65 1929
Chandler, Big 6 1929
Chandler, 85 1929

P 26 Chevrolet, 4, AA 1927
Chevrolet, 4, AB 1928

P 27 Chrysler, 52 1928

P 28 Whippet, 4 1927

P 28 Whippet, 4, 96A (ring gear only) 1929
Whippet, 6, 98A 1929
Whippet, 4, 96A 1930

P 29 Oakland, 8 1931
Pontiac, 6, 401 1931
Pontiac, 6, 402 1932

P 32 Willys-Knight, 56 1928

P 33 Reo Flying Cloud, 6, A 1928

P 34 Reo Wolverine, 6 1928

P 35 Dodge Bros., Victory 6 1928
Dodge Bros., Senior 6 1928
Dodge, Standard 6 1928

P 38 Erskine American, 6, 51 1928

P 39 Peerless, 6-61 A 1929

P 40 Peerless, 6-61 1929

P 41 Auburn, 88 1928

P 43 Buick, 120 1928

P 44 Buick, 128 1928

P 45 Pontiac, 6-27 1927
Pontiac, 6-28 1928
Pontiac, 6-29 1929

P 48 Durant, 55 1928
Durant, 65 1928
Durant, Four, 4 1929
Durant, Six, 60 1929
Durant, Six, 66 1929
Durant, 63 1930
Dodge Bros., 6, DB 1930
Star, 4, M 1928

P 50 Chrysler, 65 1929

P 51 Chrysler, 72 1928
Chrysler, 75 1929

P 52 Oldsmobile, 6, F28 1928
Oldsmobile, 6, F29 1929

P 53 Whippet, 6, 98 (ring gear only) 1928
Whippet, 4, 96 (ring gear only) 1928

P 54 Plymouth, 4 1929
Plymouth, 4 1930

P 55 Moon, 6-72 1929
Windsor, 6-69 1929
Windsor, 6-72 1929

P 56 Durant, 617 1930

P 58 Studebaker, Com'der 6 1928

P 59 Durant, Six, 70 1929
Durant, 75 1928

P 61 Graham-Paige, 610 1928

P 62 Graham-Paige, 614 1928
Graham-Paige, 615 1929
Graham, Spc. 6 1930

P 63 Graham-Paige, 619 1928
Graham-Paige, 629 1928
Graham-Paige, 835 1928
Graham-Paige, 621 1929
Graham-Paige, 827 1929
Graham-Paige, 837 1929
Graham, Cust. 8, 127 1930
Graham, Cust. 8, 137 1930

P 64 Chevrolet, 6, AC 1929

P 65 Marquette, 6, 114-30 1930

P 66 Hudson, Super 6 1929

P 67 Hupmobile, 8, M, Century 1928
Hupmobile, 8, M, Century 1929

P 68 Reo Mate, 6, B2 1929
Reo, 6, 15 1930

P 69 Willys-Knight, 70B 1929
Willys-Knight, 70B 1930
Willys-Knight, 87 1930
Willys-Knight, 95 1932

P 71 Elcar, 75 1929
Elcar, 95 1929
Elcar, 96 1929

P 72 Studebaker, Dictator 6 1928
Studebaker, Dictator, 6 1929
Studebaker, Dictator, 6 1928
Studebaker, Dictator, 6 1929

P 73 Reo, 6, 20 1930
Reo, 6, 20 1931
Reo, 6-21 1932

P 74 Ford, A 1929
Ford, A 1930
Ford, A 1931
Ford, A 1932
Ford, B 1932
Ford, V8 1932

P 74A Ford, A 1928

P 75 Studebaker, President, 8 1928
Studebaker, President, 8 1929
Studebaker, Pres., 8, FH 1930
Studebaker, Pres., 8, FE 1930
Studebaker, Pres., 8 1931
Studebaker, Pres., 8, 91 1932
Studebaker, Spd. Pres. 92 1933

P 76 LaSalle, V8, 303 1928
LaSalle, V8, 328 1929
LaSalle, V8, 340 1930
LaSalle, V8, 345 1931
LaSalle, V8, 345B 1932

P 77 Cadillac, V16, 452 1930
Cadillac, V16, 452 1931

P 78 Hupmobile, 6, A, Century 1928
Hupmobile, 6, A, Century 1929

P 79 Studebaker, 6, 55 1932

P 80 Willys-Knight, 70A 1928

P 81 Chrysler, 80L 1928

P 82 Studebaker, President, 8 1929

P 83 Studebaker, Dict., 8, FC 1930

P 84 Studebaker, Com., 8, FD 1930

P 85 Studebaker, Com'der, 8 1929

P 86 Willys-Knight, 66B 1929
Willys-Knight, 66B 1930

P 87 Buick, 121 1929
Buick, 129 1929

P 89 Buick, 8-50 1931
Buick, 32-50 1932

P 90 Chevrolet, 6, AD 1930
Chevrolet, 6, AE 1931
Chevrolet, 6, BA 1932

P 91 Jordan, 8, 80 T 1930
Jordan, 8, 80 T 1931

P 92 Graham-Paige, 612 1929
Graham, Std. 6 1930
Marmon, 70 1931
Roosevelt 1929
Roosevelt 1930
DeSoto, 8, CF 1930

P 92A Hupmobile, 6, S, Century 1930
Hupmobile, Cent. 6, S 1931
Hupmobile, 6, 214 1932

P 93 Chrysler, 6 1931
Dodge Bros., 8, DC 1930
Dodge Bros., 8, DG 1931
Dodge, 6, DL 1932

P 94 Jordan, 8, 90, G 1930
Jordan, 8, 90, G 1931

P 95 Buick, 116 1929

P 96 Kissel, 8, 126 1929
Kissel, 8, 126 1930

P 97 Dodge Bros., 6, DD 1930

P 98 Chrysler, 6, CI 1932
Chrysler, 66 1931
DeSoto, 6, CK 1930
DeSoto, 8, CF 1931

P 99 Viking, V29, V30 1930

P 100 Buick, 40 1930
Buick, 32-60 1932

P 101 Buick, 50 1930
Buick, 60 1930
Buick, 8-80 1931
Buick, 32-80 1932

P 102 Buick, 8-60 1931

P 103 Buick, 8-90 1931
Buick, 32-90 1932

P 104 Essex, Challenger, 6 1930
Essex, Challenger, 6 1931

P 105 Hudson, Great 8 1930
Hudson, 8 1931

P 107 Chrysler, Imp. 6 1929
Chrysler, 66 1930

P 108 Chrysler, 70 1930

P 109 Chrysler, 77 1930
Chrysler, Imp. 6 1930

P 110 Chrysler, 70 1931
Chrysler, Imp. 8, CG 1931

P 111 Chrysler, Imp. 8, CH 1932
Dodge, 8, DK 1932

P 112 Dodge Bros., 4, 128 1928

P 113 Dodge Bros., 6, DH 1931

P 114 Hudson, Super 6 1928

P 115 Graham, Std. 8 1930

P 116 Graham, Spec. 8 1930

P 118 Graham, Std. 6 1931
Graham, Spec. 6 1931
Graham, Spec. 8 1931
Graham, Cust. 8 1931

P 119 Hupmobile, 8, C 1930
Hupmobile, 8, C 1931
Hupmobile, 8, 221 1932
Hupmobile, Cent. 8, L 1931
Hupmobile, 6, 216 1932
Hupmobile, 8, 218 1932
Hupmobile, 8, 222 1932

P 129 Chrysler, 8, CP 1932

P 120 Hupmobile, 8, H 1930
Hupmobile, 8, H 1931
Hupmobile, 8, U 1931
Hupmobile, 8, 225 1932
Hupmobile, 8, 237 1932
Hupmobile, 8, 226 1932

P 121 Kissel, 6, 73 1930

P 122 Oakland, 6, 212 1928
Pontiac, 6-30 1930

P 123 Oldsmobile, 6, F30 1930

P 124 Oldsmobile, 6, F31 1931
Oldsmobile, 6, F32 1932
Oldsmobile, 8, L32 1932
Oldsmobile, 6, F33 1933
Oldsmobile, 8, L33 1933

P 125 Nash, 980 1932

P 126 Nash, Single 6 1930
Nash, 6-60 1931
Nash, 8-70 1931

P 126A Nash, 960 1932
Nash, 970 1932

P 127 Nash, Adv. 6 1928
Nash, Adv. 6 1929
Nash, Twin Ign., 8 1930
Nash, 8-90 1931
Nash, 990 1932
Nash, 1090 1932
Nash, Amb. 8, 1190 1933
Nash, Adv. 8, 1290 1934

P 130 Gardner, 120 1929
Gardner, 125 1929
Peerless, 6-81 1929

P 131 Auburn, 115 1928
Auburn, 120 1929
Auburn, 125 1930
Gardner, 130 1929
Jordan, 8, G 1929
Peerless, 8, 125 1929

P 132 Auburn, 8-95 1930
Auburn, 8-90 1929
Gardner, 136 1930

	Gardner, 140	1930
	Gardner, 150	1930
	Gardner, 136	1931
	Gardner, 148	1931
	Gardner 158	1931
	Jordan, 6, E	1929
	Windsor, 8 92	1929
	Windsor, 6 77	1929
P 133	Auburn, 6 80	1929
	Auburn, 76	1928
P 134	Auburn, 6 85	1930
P 135	Willys, 6, 98B	1930
P 136	Willys, 8 80	1931
	Willys, 8 80D	1931
	Willys Overland, 8 88	1932
P 137	Willys Six 97	1931
	Willys Six, 98D	1931
	Willys Overland, 6 90	1932
P 138	Willys Knight 66A	1928
P 139	Willys Knight, 66D	1932
	Willys Knight, 66D	1931
P 140	Reo Master, 6 C	1929
	Reo 6 25	1930
	Reo, 6 25	1931
	Reo, 8 21	1932
	Reo, 8 25	1932
P 141	Reo, 8 31	1932
	Reo, 8, 35	1932
P 142	Reo, 8, 30, 31	1931
P 143	Erskine 6, 53	1930
	Studebaker, 6 54	1931
	Studebaker, Dict 8 62	1932
	Studebaker Com 8 71	1932
	Studebaker, Com , 8 70	1931
P 144	Studebaker, Commander 6	1929
	Studebaker, Com 6 GJ	1930
P 145	Reo 8 35	1931
P 146	Durant 6 14	1930
	Durant 6 12	1931
	Durant, 6 14	1931
	DeVaux, 6 75	1932
P 148	DeSoto, 6, SC	1932
P 149	DeSoto 6, SA	1931
	Plymouth, 4	1931
	Plymouth, 4	1932
	Reo, 6, 15	1931
P 150	Buick 33 50	1933
	Buick, 34 40	1934
P 151	Pontiac, 8, 302	1932
P 152	Graham, Prosperity 6	1931
	Graham, 6	1932
P 153	Cadillac, V8 341A	1928
	Cadillac V8 341B	1929
	Cadillac, V8 355	1931
	Cadillac, V12 370	1931
	Cadillac V8 355B	1932
	Cadillac V12 370B	1932
	Cadillac, V16, 452B	1932
P 154	Cadillac, V8, 353	1930
P 155	Essex, Greater 6	1932
	Hudson 8	1932
	Hudson Super 6	1933
	Hudson, 8	1933
P 156	Auburn, 8 98	1931
	Auburn 8 100	1932
	Auburn, 12 160	1932
P 157	Marmon, Big 8 89	1930
	Peerless Std 8	1930
	Peerless Std 8 A	1931
	Peerless, Master 8 B	1930
	Peerless Custom 8 C	1930
	Peerless, Master 8 B	1931
	Peerless, Custom 8 C	1931
	Peerless Master 8 B	1932
	Peerless, Custom 8 C	1932
P 157A	Marmon 88 CC	1931
	Marmon, 8 125, II	1932
P 158	Rockne, 6 65	1932
P 159	Austin, A	1931
	Austin A	1932
	Austin	1933
	Austin	1934
P 160	Chevrolet Std 6 CC	1933
	Chevrolet, Std 6 DC	1934
P 161	Chevrolet, Mast 6 CA	1933
	Chevrolet, Mast 6, DA	1934
P 163	Continental Beacon C 400	1933
	Continental, Flyer, C, 600	1933
P 164	Plymouth, 6	1932
	Chrysler 6	1933
	DeSoto 6 SD	1933
	DeSoto 6 DP	1933
	Plymouth, 6 Del, PD, Std Pc	1933
P 165	Reo, S	1932
P 166	Rockne 6 75	1932
	Studebaker 6 53	1930
	Studebaker Dict 6	1930
	Studebaker, Dict 8 61	1931
P 168	Essex, Super 6	1928
P 169	Graham, 8	1932
P 171	Pierce Arrow, 6, 81	1928
P 172	Stearns Knight, M 6 80	1929
	Stearns Knight, N, 6 80	1929
P 173	Blackhawk L6	1929
	Blackhawk, L8	1929
	Blackhawk L6	1930
	Blackhawk, L8	1930
	Stearns Knight, H, 8 90	1929
	Stearns Knight J 8 90	1929
	Stearns Knight H, 8 90	1930
	Stearns Knight, J, 8 90	1930
P 175	Stutz, 8 M	1929
	Stutz 8, MA	1930
	Stutz, 8 MB	1930
	Stutz, 8, MA	1931
	Stutz 8 MB	1931
	Stutz, DV32	1933
	Stutz, 8, DV32	1934
P 176	Stutz, 8, BB	1928
P 177	Stutz, 6 LA	1931
	Stutz LAA6	1933
	Stutz SV16	1933
	Stutz, 8, SV16	1934
P 178	Ford, V8	1933
	Ford V8, 40 34	1934
P 179	Pontiac, 8, 601	1933
P 180	Duesenberg, J	1928
	Duesenberg J	1929
	Duesenberg, J	1930
	Duesenberg, J	1931
	Duesenberg, J	1932
	Duesenberg J	1933
	Duesenberg, J	1934
P 181	Rockne 6 10	1933
	Studebaker, Dict 6 A	1934
P 182	Auburn, 8, 101	1933
P 183	Elcar, 120	1929
	Locomobile 86	1929
	Locomobile 88	1929
	Locomobile 8 70	1928
P 184	Franklin Airman, 12	1928
P 185	Franklin, 130	1929
	Franklin 135	1929
	Franklin, 137	1929
	Franklin 145	1930
	Franklin, 147	1930
	Franklin 15	1931
	Franklin 16	1932
	Franklin, Airman 6 16B	1933
	Franklin, Airman, 6, 16	1934
P 186	Franklin, 12 17	1932
	Franklin, 12	1933
	Franklin, 12, 17	1934
P 187	Auburn 8 105	1933
	Auburn, Cust 8 50Y	1934
P 188	Kissel, 6, 73	1929
P 189	Auburn, 12, 161	1933
P 190	Auburn, 12, 165	1933
P 191	Buick, 33 60	1933
P 192	Buick, 33 80	1933
P 193	Buick, 33 90	1933
	Buick, 34 90	1934
P 194	Chrysler Royal 8, CT	1933
	Chrysler Imperial, 8, CE	1933
	Dodge, 8, DO	1933
P 197	Chrysler, Imp Cust 8 CL	1933
P 198	Marmon, 8 79	1930
P 199	Marmon, 16	1931
	Marmon 16	1932
	Marmon, 16	1933
P 200	Pierce Arrow, 6, 36	1928
P 201	Nash 1060	1932
	Nash, 1070	1932
	Nash Std 6 1130	1933
	Nash, Spc 8 1170	1933
	Nash, Big 6, 1220	1934
P 202	Franklin Olympic	1932
	Franklin, Olympic 18B	1933
	Franklin, Olympic, 6, 18	1934
P 203	Continental, Ace 41A	1933
	Continental, 4 41	1934
P 204	Packard 6 526	1928
	Packard 8 626	1929
	Packard 6, 533	1928
	Packard, 8, 633	1929
P 206	Packard 8, 443	1928
	Packard, 8 640	1929
	Packard, 8 645	1929
	Packard, 8, 740	1930
	Packard 8 745	1930
	Packard 8 1001 1002	1933
	Packard Super 8 1003, 1004	1933
	Packard, 12 1005, 1006	1933
P 207	Packard 8 733	1930
	Packard, 8, 826	1931
	Packard 8 833	1931
	Packard, 8 840	1931
	Packard 8, 845	1931
	Packard, 8 901	1932
	Packard 8 902	1932
	Packard, 8 903	1932
	Packard, 8 904	1932
	Packard Twin 6	1932
	Packard, 8, 1100, 1, 2	1934
	Packard Super 8, 1103, 4, 5	1934
	Packard, 12, 1107, 8	1934
P 208	Packard, 8, 726	1930
P 209	Pierce Arrow, 134, B	1930
P 210	Pierce Arrow, 53	1932
	Pierce Arrow, 1242	1933
	Pierce Arrow, 1247, Std Spc	1933
P 211	Pierce Arrow, 126	1929
	Pierce Arrow, 126	1929
	Pierce Arrow, 139, B	1930
	Pierce Arrow, 132, C	1930
	Pierce Arrow, 144, A	1930
	Pierce Arrow, 43	1931
	Pierce Arrow, 42	1931
	Pierce Arrow, 41	1931
	Pierce Arrow, 54	1932
	Pierce Arrow 53	1932
	Pierce Arrow, 52	1932
	Pierce Arrow, 51	1932
P 212	Essex Terraplane, 6	1933
	Essex, Terraplane, 8	1933
P 213	Graham, Std 6	1933
	Graham, Std 6 68	1934
	Graham, De Luxe 6, 68	1934
P 214	Graham, Std 8	1933
	Graham Cust 8	1933
	Graham, Spc 8, 67	1934
	Graham, Super Spc 8, 69S	1934
	Graham Std 8 67	1934
	Graham, Super Cust 8, 69	1934
P 215	Nash, Adv 8, 1180	1933
	Nash, Adv 8, 1280	1934
P 216	Studebaker 6 56	1933
	Studebaker, Com , 8, 73	1933
P 217	Studebaker, Pres 8, 82	1933
P 218	Willys 77	1933
	Willys, 77	1934
P 219	Reo Royale, N1 2	1933
	Reo Royale, 8, N1, 2	1934
P 220	Reo, S, S2	1933
	Reo, 6, S 4	1934
P 221	Cadillac, V8, 355C	1933
	LaSalle 345C	1933
	Cadillac, V8, 355D	1934
P 222	Cadillac V12, 370C	1933
	Cadillac, V12 370D	1934
P 223	Cadillac, V16, 452C	1933
	Cadillac, V16, 452D	1934
P 224	Hupmobile, 321	1933
	Hupmobile, 6 421K	1934
	Hupmobile, 6, 421A	1934
P 225	Hupmobile 322	1933
	Hupmobile, 326	1933
	Hupmobile 8 422	1934
	Hupmobile, 8, 426	1934
P 226	Pierce Arrow, 836	1933
	Pierce Arrow, 1236	1933
	Pierce Arrow, 836A	1934
	Pierce Arrow, 840A	1934
	Pierce Arrow, 1240A	1934
	Pierce Arrow, 1248A	1934
P 227	Nash Big 6, 1120	1933
	LaFayette, 6, 110	1934
P 228	Auburn, Std 6, 52X	1934
	Auburn, Cust 6, 52Y	1934
P 229	Auburn, Std 8, 50X	1934
P 230	Buick, 34 50	1934
P 231	Buick, 34 60	1934
P 232	Chrysler 6 CA	1934
	DeSoto, 6, SE	1934
P 233	Chrysler, 8, CU	1934
P 234	Chrysler, Imp 8 CV	1934
	Chrysler, Imp Cust 8, CX	1934
P 235	Dodge 6 DR, DS	1934
	Plymouth 6 PF, PG	1934
	Plymouth, De Luxe 6, PE	1934
P 236	Hudson 8	1934
	Terraplane, 6	1934
P 237	Hupmobile, 6, 417W	1934
P 238	Hupmobile, 6, 421J	1934
P 239	Hupmobile 8, 427	1934
P 240	LaSalle 8 350	1934
	Oldsmobile, 8, L34	1934
P 241	Oldsmobile, 6, F34	1934
P 242	Pontiac, 8, 603	1934
P 244	Studebaker, Comm 8	1934
P 245	Studebaker, Pres 8	1934

Interchangeable Clutch Plates

DIRECTIONS—All Clutch Plates listed under one number, such as C6, are interchangeable. Also read directions at top of page 74.

C 1
Austin, A 1931
Austin, A 1932
Austin 1933
Austin 1934

C 2
Dodge Bros., 4, 124 1927
Dodge Bros., 4, 128 1928
Dodge Bros., Victory 6 1928
Dodge, Standard 6 1928

C 3
Buick, 115 1928
Buick, 116 1929

C 4
Essex, Super 6 1928
Essex, Challenger, 6 1929

C 5
Hudson, Super 6 1928

C 6
Kissel, 6, 73 1929
Kissel, 8, 95 1929
Peerless, 6-61 1929
Peerless, 6-81 1929
Peerless, 6-61A 1929

C 7
Ford, A 1928
Ford, A 1929

C 8
Ford, A 1930
Ford, A 1931
Ford, A 1932
Ford, B 1932

C 10
Essex, Challenger, 6 1931
Hudson, 8 1931

C 11
Pierce-Arrow, 6, 36 1928

C 12
Dodge Bros., 6, DA 1929

C 13
Dodge Bros., Senior 6 1929
Dodge Bros., Senior 6 1930
Dodge Bros., 6, DB 1930

C 15
Auburn, 6-80 1929
Graham-Paige, 610 1928
Graham-Paige, 612 1929
Graham, Spec. 6 1930
Graham, Prosperity 6 1931
Graham, Std. 6 1931
Graham, Spec. 6 1931
Graham-Paige, 629 1928
Graham-Paige, 827 1929

C 16
Oakland, 6, 212 1928

C 17
Elcar, 75 1929
Erskine American, 6, 51 1928
Erskine, 6, 52 1929

C 18
Oakland, AA6 1929
Pontiac, 6-30 1930

C 19
Chrysler, 6 1931
DeSoto, 6, CK 1930
DeSoto, 8, CF 1930
DeSoto, 8, CF 1931
Dodge Bros., 6, DD 1930
Plymouth, 6 1932

C 21
Nash, Spec. 6 1928

C 22
Chandler, 85 1929

C 23
Chandler, Big 6 1929
Chandler, 75 1929
Willys, 8-80 1931
Willys, 8-80D 1931
Willys-Overland, 8-88 1932

C 24
Dodge Bros., Senior 6 1928

C 25
Hupmobile, 8, 226 1932
Hupmobile, 8, 222 1932
Hupmobile, 326 1933
Hupmobile, 8, 426I 1934

C 26
Chrysler, 72 1928
Chrysler, 75 1929
Chrysler, 77 1930

C 27
Elcar, 95 1929
Elcar, 96 1929

C 28
Cord, 8, L-29 1930
Cord, 8, L-30 1931
Cord, 8, L-30 1932

C 29
Chrysler, 62 1928
Chrysler, 65 1929
Chrysler, 66 1930
Chrysler, 70 1930
Chrysler, 66 1931
Chrysler, 70 1931

C 30
Chrysler, 8 1931
Dodge Bros., 8, DC 1930

C 31
Durant, Six, 66 1929
Durant, Six, 70 1929
Durant, 63 1930

C 33
Auburn, 6-85 1930
Graham, Std. 6 1930

C 34
Durant, 55 1928
Durant, 65 1928

C 35
Auburn, 8-95 1930

C 36
Franklin Airman, 12A B 1928
Franklin, 130 1929

C 37
Studebaker, Dictator, 6 1928
Studebaker, Dictator, 6 1929

C 38
Blackhawk, L6 1929
Blackhawk, L8 1929
Blackhawk, L6 1930
Blackhawk, L8 1930
Stutz, 8, M 1929
Stutz, 6, LA 1931
Stutz, 6, LAA 1932

C 40
Chandler, 65 1929

C 41
Auburn, 88 1928
Franklin, 12, 17 1932
Franklin, 16 1932
Studebaker, Commander 6 1928

C 43
Chrysler, 80L 1928
Chrysler, Imp. 6 1929
Chrysler, Imp. 6 1930

C 44
Chevrolet, 6, BA 1932

C 45
Auburn, 8-90 1929
Studebaker, President, 8 1928
Studebaker, President, 8 1929
Studebaker, President, 8 1929
Studebaker, Pres., 8, FH 1930
Studebaker, Pres., 8, FE 1930
Studebaker, Pres., 8 1931

C 46
Erskine, 6 53 1930
Rockne, 6-65 1932
Rockne, 6-75 1932
Studebaker, 6, 53 1930
Studebaker, Dict., 6, GL 1930
Studebaker, Dict., 8, FC 1930
Studebaker, 6, 54 1931
Studebaker, Dict., 8-61 1931

A 47
Auburn, 115 1928

C 48
Pierce-Arrow, 125 1929
Pierce-Arrow, 126 1929
Pierce-Arrow, 132, C 1930
Pierce-Arrow, 134, B 1930
Pierce-Arrow, 139, B 1930
Pierce-Arrow, 144, A 1930
Pierce-Arrow, 43 1931
Pierce-Arrow, 42 1931
Pierce-Arrow, 41 1931
Pierce-Arrow, 54 1932
Pierce-Arrow, 53 1932
Pierce-Arrow, 52 1932
Pierce-Arrow, 51 1932
Pierce-Arrow, 836 1933
Pierce-Arrow, 1236 1933
Pierce-Arrow, 1242 1933
Pierce-Arrow, 1247 1933
Pierce-Arrow, 836A 1934
Pierce-Arrow, 840A 1934
Pierce-Arrow, 1240A 1934
Pierce-Arrow, 1248A 1934

C 49
Studebaker, Commander, 6.....1929
Studebaker, Commander, 8.....1929
Studebaker, Com., 6, GJ 1930
Studebaker, Com., 8, FD 1930
Studebaker, Com., 8-70 1931

C 50
Cadillac, V8, 353 1930
Cadillac, V16, 452 1930
Cadillac, V8, 355 1931
Cadillac, V12, 370 1931
Cadillac, V16, 452 1931

C 51
Hupmobile, 6, 216 1932
Nash, 8-70 1931
Nash, 8-80 1931
Nash, 970 1932
Nash, 980 1932
Nash, 1070 1932
Nash, 1080 1932

C 52
Buick, 8-80 1931
Buick, 8-90 1931
Buick, 32-80 1932
Buick, 32-90 1932
Buick, 33-90 1933
Buick, 33-80 1933
Buick, 34-90 1934

C 53
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Buick, 33-60 1933
Buick, 34-60 1934

C-54
Buick, 8-50 1931
Buick, 32-50 1932
Buick, 50 1930
Buick, 33-50 1933
Buick, 34-50 1932

C 55
Hupmobile, Cent. 8, L 1931
Hupmobile, 8, 218 1932
Studebaker, 6, 55 1932
Studebaker, Dict., 8, 62.....1932

C 56
Chrysler, Imp. 8, CG 1931

C 57
Graham, Std. 8 1930
Graham, Cust. 8, 127 1930
Graham, Cust. 8, 137 1930
Graham, Cust. 8 1931
Graham, Spec. 8 1930
Graham, Spec. 8 1931
Graham, 8 1932

C 58
Cadillac, V8, 341A 1928
Cadillac, V8, 341B 1929

C 59
Duesenberg, J 1929
Duesenberg, J 1930
Duesenberg, J 1931
Duesenberg, J 1932
Duesenberg, J 1933
Duesenberg, J 1934

C 60
Stutz, 8, MA 1930
Stutz, 8, MB 1930
Stutz, 8, MA 1931
Stutz, 8, MB 1931

C 62
Studebaker, Pres., 8, 91.....1932
Studebaker, Pres., 8-82 1933
Studebaker, Spd., Pres., 92.....1933

C 63
Packard, 8, 826 1931
Packard, 8, 833 1931
Packard, 8, 901 1932
Packard, 8, 902 1932
Packard, 8, 1001, 1002 1933

C 65
Packard, 8, 840 1931
Packard, 8, 845 1931
Packard, 8, 903 1932
Packard, 8, 904 1932

C 66
Studebaker, Com. 8, 71 1932

C 67
Willys, 6, 98B 1930
Willys Six, 97 1931
Willys Six, 98D 1931
Willys-Knight, 95 1932
Willys-Overland, 6-90 1932

C 68
Chrysler, 52 1928
Marmon, 8, Roosevelt 1930
Marmon, 70 1931
Plymouth, 4 1930
Roosevelt 1929
Roosevelt 1930

C 69
Durant, Four, 4 1929
Durant, Six, 60 1929
Star, 4, M 1928

C 70
Willys-Knight, 70B 1929
Willys-Knight, 87 1930
Willys-Knight, 70B 1930

C 71
Marmon, 8-79 1930
Marmon, Big 8-89 1930
Marmon, 88, CC 1931
Marmon, 8-125, HH 1932

Peerless, Master 8, B 1930
Peerless, Custom 8, C 1930
Peerless, Master 8, B 1931
Peerless, Custom 8, C 1931
Peerless, Master 8, B 1932
Peerless, Custom 8, C 1932

C 72
Marmon, 8, 68 1929
Marmon, 8, 78 1929
Marmon, 8-69 1930

C 73
Willys-Knight, 66B 1929
Willys-Knight, 66B 1930
Willys-Knight, 66D 1931
Willys-Knight, 66D 1932

C 74
Peerless, Std. 8 1930
Peerless, Std. 8, A 1931

C 75
Whippet, 4 1927

C 76
Studebaker, Standard 6 1927

C 77
Studebaker, Special 6 1927
Studebaker, Big 6 1927

C 78
Nash, Std. 6 1929

C 79
Whippet, 6 1927
Whippet, 6, 98 1928
Whippet, 6, 98A 1929

C 81
Kissel, 8, 126 1929
Stutz, 8, BB 1928
Stearns-Knight, M, 6-80 1929
Stearns-Knight, N, 6-80 1929

C 82
Gardner, 130 1929
Gardner, 150 1930
Gardner, 158 1931
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Windsor, 8-82 1929
Windsor, 8-92 1929

C 83
Nash, Adv. 6 1928
Nash, Adv. 6 1929

C 85 Willys-Knight, 66A 1928
Willys-Knight, 66B 1929

C 86 Pontiac, 6-27 1927

C 87 Whippet, 4, 96 1928
Whippet, 4, 96A 1929
Whippet, 4, 96A 1930

C 88 Willys-Knight, 56 1928
Willys-Knight, 70A 1928

C 89 Pontiac, 6-28 1928
Pontiac, 6-29 1929

C 90 Jordan, 8, G 1929
Jordan, 8, 80, T 1930
Jordan, 8, 90, G 1930
Jordan, 8, 80, T 1931
Jordan, 8, 90, G 1931
Reo Flying Cloud, 6 A 1928
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Reo, 6, 20 1930
Reo, 6, 25 1930
Reo, 6, 20 1931
Reo, 6, 25 1931
Reo, 6-21 1932
Reo, 8-21 1932
Reo, 8-25 1932

C 91 Reo Wolverine, 6 1928

C 92 Franklin, 135 1929
Franklin, 137 1929

C 93 Franklin, 145 1930
Franklin, 147 1930
Franklin, 15 1931
Franklin Olympic, 18B 1933
Franklin, 12, 17B 1933
Franklin Olym., 6, 18 1934
Franklin, 12, 17 1934
Stutz, 8, SV16 1932
Stutz, 8, DV32 1932
Stutz, 8, SV16 1934
Stutz, 8, DV32 1934

C 94 Reo Mate, 6, B2 1929
Reo, 6, 15 1930
Reo, 6, 15 1931

C 95 Auburn, 12-160 1932
Hupmobile, 8, H 1930
Hupmobile, 8, H 1931
Hupmobile, 8, U 1931
Hupmobile, 8, 225 1932
Hupmobile, 237 1932
Reo, 8, 30, 31 1931
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Reo, Royale, N-1, 2 1933
Reo, Royale, 8, N-1, 2 1934
Stearns-Knight, H, 8-90 1929
Stearns-Knight, J, 8-90 1929
Stearns-Knight, H, 8-90 1930
Stearns-Knight, J, 8-90 1930

C 96 Cadillac, V8, 355B 1932
Cadillac, V12, 370B 1932
Cadillac, V16, 452B 1932
Cadillac, V8, 355-C 1933
Cadillac, V12, 370-C 1933
Cadillac, V16, 452-C 1933
Cadillac, V16, 452D 1934
LaSalle, V8, 345 1931
LaSalle, V8, 345B 1932
LaSalle, 345C 1933

C 97 Rockne, 6-65 1932
Rockne, 6-10 1933
Studebaker, Dict. 6, A 1934

C 98 DeSoto, 6, K 1929
Hupmobile, 6, S, Century 1930
Oldsmobile, 6, F28 1928
Oldsmobile, 6, F29 1929
Oldsmobile, 6, F30 1930
Oldsmobile, 6, F31 1931

C 99 LaSalle, V8, 303 1928
LaSalle, V8, 328 1929
Nash, Single 6 1930
Oldsmobile, 6, F32 1932
Plymouth, 4 1931

C 100 LaSalle, V8, 340 1930
Oldsmobile, 8, L32 1932

C 101 Packard, 8, 443 1928
Packard, 8, 640 1929
Packard, 8, 645 1929
Packard, 8, 740 1930
Packard, 8, 745 1930

C 102 Franklin Olympic 1932
Franklin Airman, 16B 1933
Franklin Airman, 6, 16 1934
Packard, 6, 526 1928
Packard, 6, 533 1928
Packard, 8, 626 1929
Packard, 8, 633 1929
Packard, 8, 726 1930
Packard, 8, 733 1930

C 104 Locomobile, 86 1929
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Peerless, 8, 125 1929

C 105 Pierce-Arrow, 6, 81 1928

C 106 Plymouth, 4 1929

C 107 DeSoto, 6, SA 1931
DeSoto, 6, SC 1932
Plymouth, 4 1932

C 108 Dodge, 6, DP 1933
Plymouth, 6, PD 1933

C 109 Kissel, 6, 73 1930
Kissel, 8, 95 1930

C 110 Kissel, 8, 126 1930

C 112 Marquette, 6, 114-30 1930

C 113 Windsor, 6-72 1929

C 114 Moon, 6-72 1929

C 115 Nash, Spec. 6 1929
Nash, Twin Ign., 6 1930

C 116 Nash, Twin Ign., 8 1930
Nash, 8-90 1931
Nash, 990 1931
Nash, 1090 1932

C 117 Lincoln, V8 1928
Lincoln, V8 1929
Lincoln, V8 1930

C 118 Lincoln, V8 1931
Lincoln, V8 1932
Lincoln, V12 1932
Lincoln, V-12, 145 1933
Lincoln, V-12, 136 1933
Lincoln, V12 1934

C 122 Marmon, 16 1931
Marmon, 16 1932
Marmon, 16 1933

C 123 Pontiac, 6, 401 1931

C 124 Pontiac, 6, 402 1932
Pontiac, 8, 302 1932

C 125 Chevrolet, Std. 6, CC 1933
Chevrolet, Mast. 6, CA 1933
Chevrolet, Std. 6, DC 1934
Chevrolet, Mast. 6, DA 1934

C 126 Essex, Terraplane, Std., Sp., 6 1933

C 127 Essex, Terraplane, 8 1933

C 128 Hudson, Super 6 1933
Hudson, 8 1933

C 129 Pontiac, 8, 601 1933
Pontiac, 8, 603 1934

C 130 Buick, 120 1928
Buick, 128 1928
Buick, 121 1929
Buick, 129 1929
Buick, 40 1930

C 131 Essex, Challenger, 6 1930

C 132 Nash, Std. 6 1928

C 134 Hudson, Super 6 1929

C 135 Durant, 75 1928

C 136 DeVaux, 6-75 1932
Durant, 614 1930
Durant, 6-10 1931
Durant, 6-12 1931
Durant, 6-14 1931
Durant, 619 1931

C 137 Windsor, 6-77 1929

C 138 Durant, 617 1930

C 139 Windsor, 6-69 1929

C 140 Jordan, 6, E 1929

C 141 Graham-Paige, 614 1928
Graham-Paige, 615 1929

C 142 Hupmobile, 8, C 1930
Hupmobile, 8, C 1931
Hupmobile, 8, 221 1932

C 143 Auburn, 76 1928

C 146 Graham-Paige, 619 1928
Graham-Paige, 835 1928
Graham-Paige, 621 1929
Graham-Paige, 837 1929

C 147 Auburn, 120 1929
Auburn, 125 1930
Elcar, 120 1929

C 148 Hupmobile, 8, M, Century 1928
Hupmobile, 8, M, Century 1929

C 149 Hudson, Great 8 1930

C 151 Gardner, 120 1929
Gardner, 125 1929
Gardner, 136 1930
Gardner, 140 1930
Gardner, 136 1931
Gardner, 148 1931
Hupmobile, 6, A, Century 1928
Hupmobile, 6, A, Century 1929

C 152 Oakland, 8, 101 1930
Oakland, 8 1931

C 153 Chrysler, 8, Std. 1930

C 154 Dodge Bros., 6, DH 1931
Hupmobile, Cent. 6, S 1931

C 155 Nash, 6-60 1931
Nash, 960 1932
Nash, 1060 1932

C 156 Auburn, 8-98 1931

C 157 Dodge, 6, DL 1932
Chrysler, 6, CI 1932
Chrysler, 6, CO 1933
DeSoto, 6, SD 1933

C 158 Dodge Bros., 8, DG 1931
Dodge, 8, DK 1932
Dodge, 8, DO 1933
Nash, Std. 8, 1130 1933
Nash, Spc. 8, 1170 1933

C 159 Chrysler, 8, CP 1932
Oldsmobile, 6, F33 1933
Oldsmobile, 8, L33 1933

C 160 Nash, Adv. 8, 1180 1933

C 161 Chrysler, Imp. 8, CH 1932
Chrysler, Imp. Cust. 8, CL 1932
Chrysler, Imp. Cust. 8, CL 1933

C 162 Essex, Greater 6 1932
Hudson, 8 1932

C 163 Reo, S 1932
Reo, S, S2 1933
Reo, 6, S-4 1934

C 164 Ford, V8 1932

C 165 Auburn, 8-100 1932
Auburn, 8-101 1933
Auburn, 8-105 1933
Auburn, 12-161 1933
Auburn, 12-165 1933
Auburn, Std. 8, 50X 1934
Auburn, Cust. 8, 50Y 1934

C 166 Graham, 6 1932
Graham, Std. 6 1933
Graham, Std. 6, 68 1934
Graham, De Luxe 6, 68 1934

C 167 Packard, Twin 6 1932
Packard, Super 8, 1003, 1004 1933
Packard, 12, 1005, 1006 1933
Packard, 8, 1100, 1, 2 1934
Packard, Super 8, 1103, 4, 5 1934
Packard, 12, 1107, 8 1934

C 168 Studebaker, 6, 56 1933
Studebaker, Comm., 8, 73 1933

C 169 Ford, V8 1933
Ford, V8, 40-34 1934

C 170 Nash, Amb. 8, 1190 1933

C 171 Chrysler, Royal 8, CT 1933
Chrysler, Imp. 8, CQ 1933

C 172 Hupmobile, 321 1933
Hupmobile, 322 1933
Hupmobile, 6, 421K 1934
Hupmobile, 6, 421A 1934
Hupmobile, 8, 422F 1934
Hupmobile, 8, 427T 1934
Nash, Big 6, 1220 1934

C 173 Willys, 77 1933
Willys, 77 1934

C 174 Continental Beacon, C-400 1933

C 175 Nash, Big 6, 1120 1933

C 176 Continental Ace, 41A 1933
Continental Flyer, C-600 1933
Continental, 4-41 1934

C 177 Graham, Cust. 8 1933
Graham, Std. 8 1933
Graham, Spc. 8, 67 1934
Graham, Super Spec. 8, 69S 1934
Graham, Std. 8, 67 1934

C 178 Chevrolet, 6, AC 1929
Chevrolet, 6, AD 1930
Chevrolet, 6, AE 1931

C 180 Chevrolet, 4, AA 1927
Chevrolet, 4, AB 1928

C 181 Auburn, Std. 6, 52X 1934
Auburn, Cust. 6, 52Y 1934

C 182 Cadillac, V8, 355D 1934

C 183 Cadillac, V12, 370D 1934

C 184 Chrysler, 6, CA 1934
DeSoto, 6, SE 1934

C 185 Chrysler, Imp. 8, CU 1934
Chrysler, Imp. Cust. 8, CX 1934

C 186 Chrysler, 8, CU 1934

C 187 Dodge, 6, DR, DS 1934

C 188 Graham, Super Cust. 8, 69 1934

C 189 Hudson, 8 1934

C 190 Hupmobile, 6, 417W 1934
Hupmobile, 6, 421J 1934

C 191 LaFayette, 6, 110 1934

C 192 LaSalle, 8, 350 1934

C 193 Nash, Adv. 8, 1280 1934

C 194 Nash, Amb. 8, 1290 1934

C 195 Oldsmobile, 6, F34 1934

C 196 Oldsmobile, 8, L34 1934

C 197 Plymouth, 6, PF, PG 1934
Plymouth, De Luxe 6, PE 1934

C 198 Studebaker, Comm. 8, B 1934

C-199 Studebaker, Pres. 8, C 1934

C 200 Terraplane 6, K 1934

C 239 Stutz, LA6 1933
Stutz, SV16 1933
Stutz, DV32 1933

Interchangeable Transmissions

DIRECTIONS—All Transmissions listed under one number, such as TR7, are interchangeable. Also read directions at top of page 74.

TR 1
Auburn, 8-100 1932
Auburn, 8-101 1933
Auburn, 8-105 1933

TR 2
Auburn, 12-161 1933
Auburn, 12-165 1933

TR 4
Buick, 32-50 1932
Buick, 33-50 1933

TR 5
Buick, 32-60 1932
Buick, 33-60 1933

TR 6
Buick, 33-80 1933
Buick, 33-90 1933

TR 7
Cadillac, V8, 355B 1932
Cadillac, V12, 370B 1932
Cadillac, V16, 452B 1932
LaSalle, V8, 345B 1932
Cadillac, V8, 355C 1933
Cadillac, V12, 370C 1933
Cadillac, V16, 452C 1933
LaSalle, 345C 1933
Cadillac, V8, 355D 1934
Cadillac, V12, 370D 1934
Cadillac, V16, 452D 1934

TR 8
Chevrolet, Std. 6, CC 1933
Chevrolet, Std. 6, DC 1934

TR 9
Chevrolet, Mast. 6, CA 1933
Pontiac, 8, 601 1933
Chevrolet, Mast. 6, DA 1934
Pontiac, 8, 603 1934

TR 10
Chrysler, 6, CO 1933
Chrysler, Royal 8, CT 1933
Chrysler, Imp. 8, CQ 1933
Chrysler, Imp. Cust. 8, CL 1933
DeSoto, 6, SD 1933
Dodge, 8, DO 1933
Chrysler, 6, CA 1934
Chrysler, 8, CU 1934
DeSoto, 6, SE 1934
Dodge, 6, DR, DS 1934
Plymouth, 6, PF, PG 1934
Plymouth, De Luxe 6, PE 1934

TR 11
Continental Beacon, C400 1933
Continental Flyer, C600 1933

TR 12
Continental Ace, C41A 1933
Continental, 4-41 1934

TR 13
Dodge, 6, DP 1933
Pontiac, 6, 402 1932
Plymouth, 6, PC 1932
Plymouth, 6, PC, PD 1933

TR 14
Duesenberg, J 1929
Duesenberg, J 1930
Duesenberg, J 1931
Duesenberg, J 1932
Duesenberg, J 1933
Duesenberg, J 1934

TR 15
Essex, Terraplane 6 1933
Essex, Terraplane 8 1933

TR 16
Ford, A 1932
Ford, B 1932
Ford, V8 1932
Ford, V8 1933
Ford, V8, 40-34 1934

TR 17
Franklin, Olympic, 18 1932
Franklin, 16 1932
Franklin, Olympic, 18B 1933
Franklin, Airman, 16B 1933
Franklin, Olympic, 18 1934
Franklin, Airman, 16 1934

TR 18
Franklin, 12, 17, 18 1932
Franklin, 12, 17B 1933
Franklin, 12, 17 1934

TR 19
Graham, Std. 6 1933
Auburn, Std. 6, 52X 1934
Auburn, Cust. 6, 52Y 1934
Graham, Std. 6, 68 1934
Graham, De Luxe 6, 68 1934

TR 20
Graham, 8, 57 1932
Graham, Std. 8 1933
Graham, Cust. 8 1933
Auburn, Std. 8, 50X 1934
Auburn, Cust. 8, 50Y 1934
Graham, Spc. 8, 67 1934
Graham, Super Spc. 8, 69S 1934
Graham, Std. 8, 67 1934
Graham, Super Cust. 8, 69 1934

TR 21
Hudson, 8 1932
Hudson, Super 6 1933
Hudson, 8 1933

TR 22
Hupmobile, 321 1933
Hupmobile, 6, 417W 1934
Hupmobile, 6, 421K 1934
Hupmobile, 6, 421A 1934
Hupmobile, 6, 421J 1934

TR 23
Hupmobile, 8, 222, 8C 1932
Hupmobile, 322 1933
Hupmobile, 8, 422 1934
Hupmobile, 8, 427T 1934

TR 24
Hupmobile, 6, 216, 6S 1932
Hupmobile, 8, 226, 8H 1932
Hupmobile, 326 1933
Hupmobile, 8, 426I 1934

TR 25
Lincoln, V8 1928
Lincoln, V8 1929
Lincoln, V8 1930
Lincoln, V8 1931
Lincoln, V8 1932
Lincoln, V12 1932
Lincoln, V12, 136 1933
Lincoln, V12, 145 1933
Lincoln, V12 1934

TR 26
Marmon, 16 1933

TR 27
Nash, Big 6, 1120 1933
Nash, Std. 8, 1130 1933
LaFayette 6, 110 1934

TR 28
Nash, 1060, Big 6 1932
Nash, 1070, Std. 8 1932
Nash, Spec. 8, 1170 1933

TR 29
Nash, 1080, Spec. 8 1932
Nash, Adv. 8, 1180 1933

TR 30
Nash, Amb. 8, 1190 1933

TR 31
Oldsmobile, 6, F33 1933
Oldsmobile, 8, L33 1933

TR 32
Pierce-Arrow, 836 1933
Pierce-Arrow, 836A 1934
Pierce-Arrow, 840A 1934

TR 33
Pierce-Arrow, 1236 1933

TR 34
Pierce-Arrow, 1242 1933
Pierce-Arrow, 1247 1933
Pierce-Arrow, 1240A 1934
Pierce-Arrow, 1248A 1934

TR 35
Reo, S2 1933
Reo, 6, S-4 1934

TR 36
Reo, Royale, N-1-2 1933
Reo, Royale, 8, N1, 2 1934

TR 37
Rockne, 6-65 1932
Rockne, 6-75 1932
Rockne, 6-10 1933
Studebaker, Dict. 6, A 1934
Studebaker, Comm. 8, B 1934

TR 38
Studebaker, 6, 54 1931
Studebaker, 6, 55 1932
Studebaker, Dict., 8, 62 1932
Studebaker, 6, 56 1933

TR 39
Studebaker, Com. 8, 71 1932
Studebaker, Com. 8, 73 1933

TR 40
Studebaker, Pres., 8, 91 1932
Studebaker, Pres., 8-82 1933
Studebaker, Pres., 8-92 1933
Studebaker, Pres., 8, C 1934

TR 42
Stutz, 8, MA 1931
Stutz, 8, MB 1931
Stutz, 8, SV16 1932
Stutz, 8, DV32 1932
Stutz, SV16 1933
Stutz, DV32 1933
Stutz, 8, SV16 1934
Stutz, 8, DV32 1934

TR 43
Willys, 77 1933
Willys, 77 1934

TR 44
Auburn, 76 1928
Kissel, 6, 73 1929
Kissel, 6, 73 1930

TR 45
Reo Wolverine, 6, B 1928
Reo Mate, 6, B2 1929
Reo Mate, 6, 15 1930
Reo Mate, 6, 15 1931

TR 46
Auburn, 88 1928
Auburn, 8-90 1929
Auburn, 8-95 1930

TR 47
Auburn, 115 1928

TR 48
Auburn, 6-80 1929
Elcar, 75 1929
Elcar, 95 1929
Elcar, 96 1929
Windsor, 6-69 1929
Windsor, 6-72 1929
Auburn, 6-85 1930

TR 49
Auburn, 120 1929
Auburn, 125 1930

TR 50
Auburn, 8-98 1931

TR 52
Auburn, 12-160 1932

TR 53
Austin, A 1931
Austin, A 1932
Austin 1933
Austin 1934

TR 54
Blackhawk, L6 1929
Blackhawk, L8 1929
Blackhawk, L6 1930
Blackhawk, L8 1930
Stutz, 8, MA 1930
Stutz, 8, MB 1930
Stutz, 6, LA 1931
Stutz, 6, LAA 1932
Stutz, LAA6 1933

TR 55
Buick, 115 1928
Buick, 116 1929

TR 56
Buick, 120 1928
Buick, 128 1928
Buick, 121 1929
Buick, 129 1929

TR 57
Buick, 40 1930

TR 58
Buick, 50 1930
Buick, 60 1930

TR 59
Buick, 8-50 1931

TR 60
Buick, 8-60 1931

TR 61
Buick, 8-80 1931
Buick, 8-90 1931
Buick, 32-80 1932
Buick, 32-90 1932

TR 63
Cadillac, V8, 341A 1928

TR 64
Cadillac, V8, 341B 1929
LaSalle, V8, 328 1929

TR 65
Cadillac, V8, 353 1930
LaSalle, V8, 340 1930

TR 66
Cadillac, V16, 452 1930
Cadillac, V8, 355A 1931
Cadillac, V12, 370A 1931
Cadillac, V16, 452A 1931
LaSalle, V8, 345 1931

TR 67
Chandler, 65 1929
Chandler, Big 6 1929
Chandler, 75 1929
Chandler, 85 1929

TR 68
Chevrolet, 4, AA 1927
Chevrolet, 4, AB 1928
Pontiac, 6-27 1927
Pontiac, 6-28 1928

TR 69
Chevrolet, 6, AC 1929
Chevrolet, 6, AD 1930
Pontiac, 6-29 1929
Pontiac, 6-30 1930
Pontiac, 6, 401 1931

TR 70
Chevrolet, 6, AE 1931

TR 71
Chevrolet, 6, BA 1932

TR 72
Studebaker, 6, 53 1930
Chrysler, 52 1928
Erskine, American, 6, 51 1928
Erskine, 6, 52 1929
Erskine, 6, 53 1930
DeSoto, 6, K 1929
Chrysler, 6, CJ 1931
Plymouth, 4, Q 1929
Plymouth, 4, U, U30 1930

TR 76
Chrysler, 62 1928
Chrysler, 72 1928
Chrysler, 65 1929
Chrysler, 75 1929

TR 77
Chrysler, 80L 1928
Chrysler, Imp 6L 1929
Chrysler, Imp. 6L 1930

TR 78
Dodge Bros., 6, DA 1929
Chrysler, 66 CC 1930

TR 79
Chrysler, 70V 1930
Chrysler, 77W 1930
Chrysler, 70V 1931

TR 80
Chrysler, 66 CC 1931

TR 81
Chrysler, 8, Std., CD 1930
Chrysler, 8, CD 1931

TR 82
Chrysler, Imp. 8, CG 1931

TR 83
DeSoto, 6, SA 1931
Chrysler, 6, CI 1932
DeSoto, 6, SC 1932

TR 84
Chrysler, 8, CP 1932

TR 85
Chrysler, Imp. 8, CH 1932
Chrysler, Imp. Cust. 8, CL 1932

TR 86
Cord, 8, L-29 1930

TR 87
Cord, 8, L-30 1931
Cord, 8, L-30 1932

TR 88
DeSoto, 6, CK 1930
DeSoto, 8, CF 1930
Dodge Bros., 6, DD 1930
Dodge Bros., 8, DC 1930

TR 89
Dodge Bros., 8, DG 1931
Dodge Bros., 6, DH 1931
DeSoto, 8, CF 1931
Dodge, 6, D 1932
Dodge, 8, DK 1932

TR 90
DeVaux, 6-75 1932

TR 91
Dodge Bros., 4, 124 1927

TR 92	Dodge Bros., 4, 128	1928
	Dodge Bros., Victory 6	1928
	Dodge Bros., Standard 6	1928
	Dodge Bros., Senior 6	1928
	Dodge Bros., Senior 6	1929
	Dodge Bros., Senior 6	1930
TR 93	Windsor, 6-77	1929
	Windsor, 8-92	1929
TR 94	Durant, 55	1928
	Durant, Four, 4	1929
	Durant, Six, 60	1929
	Durant, 63	1930
TR 95	Durant, 65	1928
TR 96	Durant, 75	1928
TR 97	Durant, Six, 66	1929
TR 98	Durant, Six, 70	1929
TR 99	Durant, 614	1930
	Durant, 6-12	1931
	Durant, 6-14	1931
TR 100	Durant, 617	1930
TR 101	Durant, 6-10	1931
TR 102	Durant, 619	1931
TR 105	Elcar, 120	1929
	Kissel, 8, 95	1930
	Windsor, 8-82	1929
TR 106	Essex, Super 6	1928
	Essex, Challenger, 6	1929
TR 107	Essex, Challenger, 6	1930
	Essex, Challenger, 6	1931
	Hudson, Great 8	1930
	Hudson, 8	1931
TR 108	Essex, Greater 6	1932
TR 109	Ford, T	1927
TR 110	Ford, A	1928
	Ford, A	1929
	Ford, A	1930
	Ford, A	1931
TR 112	Franklin, Airman, 12A & B	1928
TR 113	Franklin, 130	1929
TR 114	Franklin, 135	1929
	Franklin, 137	1929
TR 115	Franklin, 145	1930
	Franklin, 147	1930
TR 116	Franklin, 15	1931
TR 118	Gardner, 125	1929
	Gardner, 130	1929
TR 119	Jordan, 6, E	1929
	Gardner, 120	1929
TR 120	Gardner, 136	1930
	Gardner, 140	1930
	Gardner, 136	1931
	Gardner, 148	1931
TR 121	Gardner, 150	1930
TR 122	Gardner, 158	1931
TR 123	Graham-Paige, 610	1928
TR 124	Graham-Paige, 614	1928
TR 125	Graham-Paige, 619	1928
	Graham-Paige, 629	1928
	Graham-Paige, 835	1928
TR 126	Graham-Paige, 612	1929
	Graham, Std. 6	1930
	Graham, Std. 6-53	1931
TR 127	Graham-Paige, 615	1929
	Graham, Spc. 6	1930
TR 128	Graham-Paige, 621	1929
	Graham-Paige, 827	1929
	Graham-Paige, 837	1929
TR 129	Graham, Std. 8	1930
	Graham, Cust. 8, 827	1930
	Graham, Cust. 8, 837	1930
TR 130	Graham, Spec. 8	1930
TR 131	Graham, Prosperity 6, 56	1931
TR 132	Graham, Spec. 6, 54	1931
TR 133	Graham, Spec. 8	1931
	Graham, Cust. 8	1931
TR 134	Graham, 6, 58	1932
TR 135	Hudson, Super 6	1928
	Hudson, Super 6	1929
TR 140	Hupmobile, 6, A, Century	1928
	Hupmobile, 6, A, Century	1929
TR 141	Hupmobile, 8, M, Century	1928
	Hupmobile, 8, M, Century	1929
TR 142	Hupmobile, 6, S, Century	1930
TR 143	Hupmobile, 8, C	1930
TR 144	Hupmobile, 8, H	1930
TR 145	Hupmobile, 8, H	1931
	Hupmobile, 8, U	1931
	Hupmobile, Cent. 6, S	1931
	Hupmobile, 8, 225, 8H	1932
	Hupmobile, 8, 237, 8U	1932
TR 146	Hupmobile, Cent. 8, L	1931
	Hupmobile, 8, C	1931
	Hupmobile, 8, 218, 8L	1932
	Hupmobile, 8, 221, 8C	1932
TR 147	Hupmobile, 6, 214, 65	1932
TR 150	Jordan, 8, G	1929
TR 151	Jordan, 8, 80, T	1930
	Jordan, 8, 90, G	1930
	Jordan, 8, 80 T	1931
	Jordan, 8, 90, G	1931
TR 152	Kissel, 8, 95	1929
	Kissel, 8, 126	1929
	Kissel, 8, 126	1930
TR 153	LaSalle, V8, 303	1928
TR 155	Locomobile, 86	1929
TR 156	Locomobile, 88	1929
TR 160	Marmon, 8, 78	1929
	Marmon, 8-79	1930
TR 161	Marmon, 8, 68	1929
TR 162	Marmon, 8, Roosevelt	1930
	Roosevelt	1929
	Roosevelt	1930
TR 163	Marmon, 8-69	1930
TR 164	Marmon, Big 8-89	1930
TR 165	Marmon, 70	1931
TR 166	Marmon, 88, CC	1931
TR 167	Marmon, 16	1931
	Marmon, 16	1932
TR 168	Marmon, 8-125, HH	1932
TR 171	Moon, 6-72	1929
TR 172	Nash, Std. 6, 320	1928
	Nash, Std. 6, 420	1929
TR 173	Nash, Spec. 6, 330	1928
	Nash, Adv. 6, 360	1928
TR 174	Nash, Spec. 6, 430	1929
	Nash, Adv. 6, 460	1929
	Nash, Twin Ign., 6, 480	1930
	Nash, Twin Ign., 8, 490	1930
TR 175	Nash, Single 6, 480	1930
TR 176	Nash, 6-60	1931
	Nash, 8-70	1931
TR 177	Nash, 8-80	1931
TR 178	Nash, 8-90	1931
TR 179	Nash, 960	1932
	Nash, 970	1932
TR 180	Nash, 980	1932
TR 181	Nash, 990	1932
TR 182	Nash, 1090, Adv. 8	1932
TR 183	Oakland, 6, 212	1928
TR 184	Oakland, AA6	1929
TR 185	Oakland, 8, 101	1930
	Oakland, 8	1931
TR 187	Marquette, 6	1930
	Oldsmobile, 6, F28	1928
	Oldsmobile, 6, F29	1929
	Oldsmobile, 6, F30	1930
TR 188	Oldsmobile, 6, F31	1931
TR 189	Oldsmobile, 6, F32	1932
	Oldsmobile, 8, L32	1932
TR 190	Packard, 8, 726	1930
	Packard, 8, 733	1930
	Packard, 8, 740	1930
	Packard, 8, 745	1930
TR 191	Packard, 8, 826	1931
	Packard, 8, 833	1931
	Packard, 8, 840	1931
	Packard, 8, 845	1931
TR 192	Packard, 8, 901	1932
	Packard, 8, 902	1932
	Packard, 8, 903	1932
	Packard, 8, 904	1932
TR 193	Peerless, 6-61	1929
	Peerless, 6-61A	1929
	Peerless, 6-81	1929
	Peerless, 8, 125	1929
TR 194	Peerless, Std. 8, A	1930
	Peerless, Std. 8, A	1931
TR 195	Peerless, Master 8, B	1930
	Peerless, Master 8, B	1931
	Peerless, Master 8, B	1932
TR 196	Peerless, Custom 8, C	1930
	Peerless, Custom 8, C	1931
	Peerless, Custom 8, C	1932
TR 198	Pierce-Arrow, 6, 36	1928
TR 199	Pierce-Arrow, 6, 81	1928
TR 200	Pierce-Arrow, 125	1929
TR 201	Pierce-Arrow, 126	1929
TR 202	Pierce-Arrow, 132, C	1930
	Pierce-Arrow, 134, B	1930
	Pierce-Arrow, 139, B	1930
	Pierce-Arrow, 144, A	1930
TR 203	Pierce-Arrow, 43	1931
	Pierce-Arrow, 42	1931
	Pierce-Arrow, 41	1931
TR 204	Pierce-Arrow, 54	1932
	Pierce-Arrow, 53	1932
	Pierce-Arrow, 52	1932
	Pierce-Arrow, 51	1932
TR 205	Plymouth, 4, PA	1931
	Plymouth, 4, PB	1932
TR 209	Pontiac, 6, 402	1932
TR 210	Pontiac, 8, 302	1932
TR 211	Reo Flying Cloud, 6, A	1928
	Reo, Master 6, C	1929
	Reo, 6, 20, Fly. C	1930
	Reo, 6, 25, Fly. C	1930
	Reo, 6, 20, Fly. C	1931
	Reo, 6, 25, Fly. C	1931
	Reo, 6-21, 25, Fly. C	1932
	Reo, 8-21, Fly. C	1932
	Reo, 8-25, Fly. C	1932
TR 212	Reo, 8, 30, 31, Royale	1931
	Reo, 8, 35	1931
	Reo, 8, 31, Royale	1932
	Reo, 8, 35, 52	1932
TR 213	Reo, S	1932
TR 215	Stearns-Knight, H, 8-90	1929
TR 216	Stearns-Knight, J, 8-90	1929
TR 217	Stearns-Knight, M, 6-80	1929
	Stearns-Knight, H, 8-90	1930
TR 218	Stearns-Knight, N, 6-80	1929
	Stearns-Knight, J, 8-90	1930
TR 219	Studebaker, Standard 6, EU	1927
	Studebaker, Dictator, 6, GE	1928
TR 220	Studebaker, Special 6	1927
	Studebaker, Big 6, ES	1927
TR 221	Studebaker, Com'der, 6, GB	1928
	Studebaker, President, 8, FA	1928
	Studebaker, President, 8, FH	1929
	Studebaker, President, 8, FE	1929
TR 222	Studebaker, Dictator, 6, GE	1929
	Studebaker, Dict., 6, GL	1930
	Studebaker, Dict., 8, FC	1930
	Studebaker, Dict., 8-61	1931
TR 223	Studebaker, Com'der, 6, GJ	1929
	Studebaker, Com'der, 8, FD	1929
	Studebaker, Com., 6, GJ	1930
	Studebaker, Com., 8, FD	1930
	Studebaker, Com., 8-70	1931
TR 224	Studebaker, Pres., 8, FH	1930
	Studebaker, Pres., 8, FE	1930
TR 225	Studebaker, Pres., 8, 80, 90	1931
TR 226	Stutz, 8, BB	1928
	Stutz, 8, M	1929
TR 228	Viking, V29, V30	1930
TR 229	Whippet, 4	1927
	Whippet, 4, 96	1928
TR 230	Whippet, 6	1927
TR 231	Willys-Knight, 56	1928
	Whippet, 6, 98	1928
TR 232	Whippet, 4, 96A	1929
	Whippet, 4, 96A	1930
TR 233	Whippet, 6, 98A	1929
	Willys, 6, 98B	1930
TR 234	Willys Six, 97	1931
	Willys Six, 98D	1931
	Willys-Knight, 95	1932
	Willys-Overland, 6-90	1932
TR 235	Willys, 8-80	1931
	Willys, 8-80D	1931
	Willys-Knight, 66D	1931
	Willys-Knight, 66D	1932
TR 236	Willys-Overland, 8-88	1932
TR 237	Willys-Knight, 70A	1928
	Willys-Knight, 66B	1929
	Willys-Knight, 66B	1930
TR 238	Willys-Knight, 66A	1928
TR 239	Willys-Knight, 70B	1929
	Willys-Knight, 87	1930
	Willys-Knight, 70B	1930
TR 240	Packard, 6, 526	1928
	Packard, 6, 533	1928
TR 241	Packard, 8, 443	1928
TR 242	Packard, 8, 626	1929
	Packard, 8, 633	1929
	Packard, Twin 6, 905, 6	1932
TR 244	Packard, 8, 1001-2	1933
	Packard, Super 8, 1003-4	1933
	Packard, 8, 1100, 1, 2	1934
	Packard, Super 8, 1103, 4, 5	1934
TR 245	Packard, 12, 1005-6	1933
	Packard, 12, 1107, 8	1934
TR 246	Packard, 8, 640	1929
	Packard, 8, 645	1929
TR 248	Dodge Bros., 6, DB	1930
TR 249	Buick, 34-40	1934
	Buick, 34-50	1934
TR 250	Buick, 34-60	1934
	Buick, 34-90	1934
TR 251	Chrysler, Imp. 8, CU	1934
	Chrysler, Imp. Cust. 8, CX	1934
TR 252	Hudson, 8	1934
	Terraplane 6	1934
TR 253	LaSalle, 8, 350	1934
	Oldsmobile, 6, F34	1934
	Oldsmobile, 8, L34	1934
TR 254	Nash, Big 6, 1220	1934
	Nash, Adv. 8, 1280	1934
	Nash, Amb. 8, 1290	1934

Interchangeable Engines

DIRECTIONS—All Engines listed under one number, such as E2, are interchangeable Also read directions at top of page 74.

E 1	Chevrolet, Std 6 CC	1933
E 2	Auburn 76	1928
	Auburn 6 80	1929
	Elcar 75	1929
	Kissel 6 73	1929
	Kissel, 6, 73	1930
E 3	Auburn 6 85	1930
	Gardner 136	1930
	Gardner, 136	1931
E 4	Gardner, 120	1929
E 5	Auburn 88	1928
	Auburn 8 90	1929
	Elcar, 95	1929
	Elcar 96	1929
	Gardner 125	1929
	Kissel 8 95	1929
	Kissel, 8, 95	1930
E 6	Auburn 8 95	1930
	Gardner, 140	1930
	Gardner, 148	1931
E 7	Auburn 8 98	1931
	Auburn 8 100	1932
	Auburn 8 101	1933
	Auburn, 8 105	1933
E 8	Cord, 8 L 29	1930
	Cord 8 L 30	1931
	Cord 8, L 30	1932
E 10	Auburn 115	1928
	Auburn 120	1929
	Elcar 120	1929
	Kissel 8 126	1929
	Kissel, 8, 126	1930
E 11	Auburn, 125	1930
E 12	Gardner 130	1929
	Gardner 150	1930
	Gardner, 158	1931
E 13	Locomobile 86	1929
	Locomobile, 88	1929
E 14	Auburn, 12 160	1932
	Auburn 12 161	1933
	Auburn, 12 165	1933
E 15	Durant Four 4	1929
	Star 4, M	1928
E 16	Chevrolet Mast 6 CA	1933
E 17	Chrysler, Royal 8, CT	1933
E 18	Continental Beacon	1933
E 20	Continental Flyer	1933
E 21	DeSoto, 6	1933
E 22	Dodge, 6	1933
E 24	Durant, 6 10	1931
E 25	Erskine American 6 51	1928
	Erskine, 6, 52	1929
E 26	Ford, V8	1933
E 29	Moon 6 72	1929
	Peerless 6 61	1929
	Peerless 6 61A	1929
	Windsor 6 72	1929
	Windsor 6 77	1929
E 30	Dodge, 8	1933
E 32	Peerless 8 125	1929
E 33	Dodge Bros , Senior 6	1928
E 34	Essex Terraplane 8	1933
E 35	Reo Wolverine, 6	1928
E 36	Peerless Master 8 B	1930
	Peerless Custom 8 C	1930
	Peerless, Master 8, B	1931
	Peerless Custom 8 C	1931
	Peerless Master 8 B	1932
	Peerless Custom 8, C	1932
E 38	Durant 55	1928
	Durant Six 60	1929
	Durant 63	1930
E 39	Dodge Bros Senior 6	1929
	Dodge Bros , Sen or 6	1930
E 41	Graham Std 6	1933
	Graham Std 6 68	1934
	Graham, De Luxe 6, 68	1934
E 42	Willys 8 80	1931
	Willys 8 80D	1931
	Willys Overland, 8 88	1932
E 43	Durant 65	1928
	Durant, Six 66	1929
E 44	Jordan 8 G	1929
	Jordan 8 90 G	1930
	Jordan 8 90 G	1931
	Windsor 8 82	1929
	Windsor, 8 92	1929
E 45	Durant, 75	1928
	Durant Six 70	1929
	Durant, 617	1930
E 46	Reo Mate 6 B2	1929
	Reo 6, 15	1931
	Reo, 6, 15	1930
E 47	Blackhawk L8	1929
	Blackhawk, L8	1930
E 48	Jordan, 8 80 T	1930
	Jordan 8 80 I	1931
	Peerless Std 8	1930
	Peerless Std 8, A	1931
E 49	Jordan 6 E	1929
	Peerless, 6 81	1929
E 50	Hupmobile 321	1933
	Hupmobile 6 421K	1934
	Hupmobile, 6, 421A	1934
E 51	Durant 614	1930
	Durant 6 12	1931
	Durant 6 14	1931
	Durant, 619	1931
E 52	Hupmobile 322	1933
	Hupmobile, 8 422	1934
E 53	Hupmobile, 326	1933
	Hupmobile 8, 426	1934
E 54	Windsor, 6 69	1929
E 55	DeVaux 6 75	1932
	Continental Ace	1933
	Continental 4 41	1934
E 56	Reo 8 21	1932
	Reo, 8 25	1932
E 57	Austin, A	1931
	Austin, A	1932
	Austin	1933
	Austin	1934
E 58	Blackhawk L6	1929
	Blackhawk L6	1930
	Stutz 6 LA	1931
	Stutz 6 LAA	1932
	Stutz, LAA6	1933
E 59	Buick, 115	1928
E 60	Buick 120	1928
	Buick 128	1928
E 61	Buick, 116	1929
E 62	Buick 121	1929
	Buick 129	1929
E 63	Buick 40	1930
E 64	Buick 50	1930
	Buick 60	1930
E 65	Buick, 8 50	1931
E 66	Buick 8 60	1931
	Buick 32 60	1932
	Buick 33 60	1933
E 67	Buick 8 80	1931
	Buick 8 90	1931
	Buick, 32 80	1932
	Buick 32 90	1932
	Buick 33 80	1933
	Buick 33 90	1933
	Buick, 34 90	1934
E 68	Buick 32 50	1932
	Buick 33 50	1933
E 70	Cadillac V8 341A	1928
	Cadillac V8 341B	1929
	LaSalle, V8, 340	1930
E 71	Cadillac V8 353	1930
	Cadillac V8 355	1931
	LaSalle V8, 345	1931
E 72	LaSalle, V8 345B	1932
	Cadillac, V8 355B	1932
	Cadillac V8 355C	1933
	LaSalle V8	1933
E 73	Cadillac, V12 370	1931
	Cadillac, V12 370B	1932
	Cadillac, V12, 370C	1933
E 74	Cadillac V16 452	1930
	Cadillac, V16 452	1931
	Cadillac V16 452B	1932
	Cadillac, V16, 452C	1933
E 75	LaSalle, V8, 303	1928
E 76	LaSalle V8 328	1929
E 78	Chandler, 65	1929
E 79	Lincoln, V12, 136	1933
E 83	Chandler, Big 6	1929
E 84	Chandler, 75	1929
E 85	Chandler 85	1929
E 86	Chevrolet 4 AA	1927
	Chevrolet, 4 AB	1928
E 87	Chevrolet 6, AC	1929
E 88	Chevrolet 6 AD	1930
	Chevrolet 6 AE	1931
E 89	Chevrolet 6, BA	1932
E 90	Chrysler, 52	1928
E 91	Chrysler, 62	1928
E 93	Chrysler 80L	1928
	Chrysler Imp 6	1929
	Chrysler, Imp 6	1930
E 94	Chrysler, 72	1928
E 95	Chrysler 65	1929
E 96	Chrysler, 75	1929
E 97	Chrysler, 66	1930
	Chrysler, 66	1931
E 98	Chrysler, 70	1930
	Chrysler 77	1930
	Chrysler, 70	1931
E 99	Chrysler, 6	1931
E 100	Chrysler 6 CI	1932
	Chrysler, 6, CO	1933
E 101	Chrysler, 8, Std	1930
E 102	Chrysler, Imp 8 CG	1931
	Chrysler Imp 8 CH	1932
	Chrysler Imp Cust 8 CL	1932
	Chrysler, Imp Cust 8, CL	1933
E 103	Chrysler 8 CP	1932
	Chrysler, Imp 8, CQ	1933
E 104	Nash Big 6 1120	1933
	LaFayette 6, 110	1934
E 105	Nash, Std 8, 1130	1933
E 106	DeSoto 6 K	1929
	DeSoto, 6, CK	1930
E 107	DeSoto, 8, CF	1930
E 108	DeSoto, 6 SA	1931
E 109	DeSoto, 8, CF	1931
E 110	DeSoto, 6, SC	1932
E 111	Dodge Bros , 4 124	1927
	Dodge Bros , 4, 128	1928
E 112	Dodge Bros , Victory 6	1928
	Dodge Standard 6	1928
	Dodge Bros , 6, DA	1929
	Dodge Bros , 6, DB	1930
E 113	Dodge Bros , 6 DD	1930
E 114	Dodge Bros , 8, DC	1930
E 115	Dodge Bros 6, DH	1931
E 116	Dodge Bros , 8, DG	1931
E 117	Dodge 6 DL	1932
E 118	Dodge 8, DK	1932
E 119	Nash Spc 8, 1170	1933
E 120	Duesenberg, J	1929
	Duesenberg J	1930
	Duesenberg, J	1931
	Duesenberg J	1932
	Duesenberg J	1933
	Duesenberg, J	1934
E 121	Erskine, 6 53	1930
	Rockne 6 75	1932
	Studebaker 6 53	1930
	Studebaker 6, 54	1931
E 123	Essex Super 6	1928
	Essex Challenger 6	1929
E 124	Essex, Challenger 6	1930
E 125	Essex, Challenger, 6	1931
E 126	Essex, Greater 6	1932
	Essex, Terraplane 6	1933
	Hudson, Super 6	1933
E 127	Willys Knight, 56	1928
E 128	Ford, T	1927
E 129	Ford A	1928
	Ford A	1929
	Ford, A	1930
	Ford A	1931
	Ford A	1932
E 130	Ford B	1932
E 131	Ford, V8	1932
E 133	Franklin Airman 12A B	1928
	Franklin, 130	1929
E 134	Franklin 135	1929
	Franklin, 137	1929
E 135	Franklin, 145	1930
	Franklin 147	1930
	Franklin, 15	1931
	Franklin Olympic	1932
	Franklin 16	1932
	Franklin Olympic 6 18B	1933
	Franklin Airman 6, 16B	1933
	Franklin Olympic 6 18	1934
	Franklin Airman 6, 16	1934
E 136	Franklin, 12 17	1932
	Franklin, 12 17B	1933
	Franklin, 12, 17	1934

E 137	Graham Paige, 610	1928
E 138	Graham Paige, 614	1928
E 139	Graham Paige, 619	1928
	Graham Paige, 629	1928
	Graham Paige, 621	1929
E 140	Graham Paige, 835	1928
	Graham Paige, 827	1929
	Graham Paige, 837	1929
	Graham, Cust 8, 127	1930
	Graham, Cust 8, 137	1930
E 141	Graham-Paige, 612	1929
E 142	Graham Paige, 615	1929
	Graham, Spc 6	1930
	Graham, Std 6	1931
	Graham, Spc 6	1931
E 143	Graham, Std 6	1930
	Graham, Prosperity 6	1931
	Graham, 6	1932
E 144	Graham, Std 8	1930
	Graham, Spec 8	1930
	Graham, Cust 8	1931
E 145	Graham, Spec 8	1931
	Graham, 8	1932
	Graham Std 8	1933
	Graham, Cust 8	1933
	Graham Spec 8 67	1934
	Graham, Std 8, 67	1934
E 146	Hudson, Super 6	1928
	Hudson, Super 6	1929
E 147	Hudson, Great 8	1930
E 148	Hudson, 8	1931
E 149	Hudson 8	1932
	Hupmobile, 321	1933
E 151	Hupmobile, 6, A Century	1928
	Hupmobile, 6, A Century	1929
E 152	Hupmobile, 6 S Century	1930
	Hupmobile, 6, S Century	1931
	Hupmobile, 6, 214	1932
E 153	Hupmobile, 6, 216	1932
E 155	Hupmobile, 8 M Century	1928
	Hupmobile, 8 M, Century	1929
E 156	Hupmobile, 8 C	1930
	Hupmobile, 8, C	1931
	Hupmobile, 8, 221	1932
E 157	Hupmobile, 8 H	1930
	Hupmobile, 237	1932
	Hupmobile, 8, H	1931
	Hupmobile, 8 U	1931
	Hupmobile, 8, 225	1932
E 158	Hupmobile Cent 8, L	1931
	Hupmobile, 8, 218	1932
E 159	Hupmobile, 8, 222	1932
E 160	Hupmobile, 8, 226	1932
E 161	Nash, Adv 8 1180	1933
	Nash, Adv 8, 1280	1933
E 163	Lincoln, V8	1928
	Lincoln V8	1929
	Lincoln, V8	1930
E 164	Lincoln, V8	1931
	Lincoln, V8	1932
E 165	Lincoln, V12	1932
	Lincoln V12-145	1933
E 166	Nash, Amb 8 1190	1933
	Nash Amb 8, 1290	1934
E 167	Oldsmobile 6, F33	1933
E 169	Oldsmobile 8, L33	1933
E 170	Packard 12, 1005 1006	1933
	Packard, 12, 1107, 8	1934
E 171	Marmon 8, Roosevelt	1930
	Roosevelt	1929
	Roosevelt	1930
E 172	Marmon, 8, 78	1929
E 173	Marmon 8 68	1929
	Marmon, 8 69	1930
	Marmon, 70	1931
E 174	Marmon, Big 8 89	1930
	Marmon, 88 CC	1931
	Marmon, 8 125, HH	1932
E 175	Marmon, 8-79	1930
E 176	Marmon, 16	1931
	Marmon, 16	1932
	Marmon, 16	1933
E 177	Marquette, 6, 114 30	1930
E 179	Nash Std 6	1928
	Nash, Std 6	1929
E 180	Nash, Single 6	1930
	Nash 6 60	1931
	Nash, 1060	1932
	Nash, 960	1932
E 181	Nash, Spec 6	1928
	Nash, Spec 6	1929
E 182	Nash, Twin Ign , 6	1930
E 183	Nash, Adv 6	1928
	Nash, Adv 6	1929
E 184	Nash, Twin Ign 8	1930
	Nash, 8 90	1931
	Nash, 990	1932
E 185	Nash, 1090	1932
E 186	Nash 8 70	1931
	Nash, 970	1932
E 187	Nash, 1070	1932
E 188	Nash, 8 80	1931
	Nash, 980	1932
E 189	Nash, 1080	1932
E 190	Oakland, 6, 212	1928
E 191	Oakland, AA6	1929
E 192	Oakland, 8, 101	1930
	Oakland, 8	1931
E 194	Oldsmobile, 6, F28	1928
	Oldsmobile, 6 F29	1929
	Oldsmobile, 6, F30	1930
E 195	Oldsmobile, 6, F31	1931
E 196	Oldsmobile, 6, F32	1932
E 197	Oldsmobile, 8, L32	1932
E 198	Packard 6, 526	1928
	Packard, 6, 533	1928
E 199	Packard, 8, 443	1928
	Packard 8 640	1929
	Packard, 8 645	1929
	Packard 8, 740	1930
	Packard, 8, 745	1930
E 200	Packard 8, 626	1929
	Packard 8, 633	1929
	Packard, 8, 726	1930
	Packard, 8, 733	1930
E 201	Packard, 8, 826	1931
	Packard, 8, 833	1931
E 202	Packard, 8, 840	1931
	Packard, 8, 845	1931
E 203	Packard, 8, 901	1932
	Packard, 8, 902	1932
	Packard 8, 1001, 1002	1933
	Packard, 8, 1100, 1, 2	1934
E 204	Packard 8 903	1932
	Packard 8 904	1932
	Packard, Super 8, 1003, 1004	1933
	Packard, Super 8, 1103, 4, 5	1934
E 205	Packard, Twin 6	1932
E 206	Pierce Arrow, 836	1933
	Pierce Arrow, 836A	1934
E 207	Pierce-Arrow, 1240	1933
E 209	Pierce Arrow, 6, 81	1928
E 210	Pierce Arrow, 6 36	1928
E 211	Pierce-Arrow, 125	1929
	Pierce Arrow, 126	1929
E 212	Pierce Arrow, 132, C	1930
E 213	Pierce Arrow, 134, B	1930
	Pierce Arrow 43	1931
	Pierce Arrow, 54	1932
E 214	Pierce Arrow, 139, B	1930
E 215	Pierce Arrow, 144, A	1930
	Pierce Arrow, 42	1931
	Pierce Arrow, 41	1931
E 216	Pierce Arrow, 53	1932
E 217	Pierce Arrow, 52	1932
	Pierce Arrow, 51	1932
E 218	Plymouth, 4	1929
E 219	Plymouth, 4	1930
	Plymouth, 4	1931
E 220	Plymouth, 4	1932
E 221	Plymouth, 6	.1932
E 222	Pontiac, 6 27	1927
	Pontiac, 6 28	1928
E 223	Pontiac, 6 29	1929
	Pontiac, 6 30	1930
	Pontiac, 6, 401	1931
E 224	Pontiac, 6, 402	1932
E 225	Pontiac, 8, 302	1932
E 226	Reo Flying Cloud 6 A	1928
E 227	Reo Master, 6, C	1929
	Reo, 6, 20	1930
	Reo, 6, 25	1930
	Reo, 6, 20	1931
	Reo, 6, 25	1931
	Reo, S	1932
	Reo, 6 21	1932
	Reo S, 6	1933
	Reo, 6, S 4	1934
E 228	Reo, 8, 30, 31	1931
	Reo, 8, 35	1931
	Reo, 8, 31	1932
	Reo, 8 35	1932
	Reo, Royale 8	1933
	Reo, Royale 8, N1, 2	1934
E 229	Pierce Arrow, 1242	1933
	Pierce Arrow, 1248	1933
	Pierce Arrow, 1240A	1934
	Pierce Arrow, 1248A	1934
E 230	Plymouth, 6, PD	1933
E 231	Pontiac, 8 601	1933
E 232	Rockne, 6 65	1932
	Rockne, 6, 10	1933
E 234	Stearns Knight, H, 8 90	1929
	Stearns Knight, J, 8 90	1929
	Stearns-Knight, H, 8 90	1930
	Stearns Knight, J, 8 90	1930
E 235	Stearns Knight, M, 6 80	1929
	Stearns Knight, N, 6 80	1929
	Willys Knight 66A	1928
	Willys Knight, 66B	1929
E 236	Willys Knight, 70A	1928
	Willys Knight, 70B	1929
	Willys Knight, 87	1930
	Willys Knight, 70B	1930
E 238	Willys Knight, 66B	1930
	Willys Knight, 66D	1931
	Willys Knight, 66D	1932
E 239	Willys-Knight, 95	1932
	Studebaker, Standard 6	1927
	Studebaker, Dictator, 6	1928
	Studebaker, Dictator, 6	1929
E 240	Studebaker, Special 6	1927
E 241	Studebaker, Big 6	1927
	Studebaker, Com'der 6	1928
E 242	Studebaker, President, 8	1928
E 243	Studebaker, Com'der, 6	1929
	Studebaker, Com'der, 6, GJ	1930
E 244	Studebaker, Com'der, 8	1929
	Studebaker, Com der, 8, FD	1930
E 245	Studebaker, President 8	1929
	Studebaker, President, 8	1929
	Studebaker Pres 8 FH	1930
	Studebaker, Pres , 8, FE	1930
E 246	Studebaker, Dict , 6, GL	1930
E 247	Studebaker, Dict , 8, FC	1930
E 248	Studebaker, Pres , 8	1931
	Studebaker, Pres , 8 91	1932
	Studebaker, Spcl , Pres 8	1933
E 249	Studebaker, 6, 55	1932
E 250	Studebaker, Dict , 8 61	1931
E 251	Studebaker, Dict , 8, 62	1932
E 252	Studebaker, Com , 8 70	1931
	Studebaker, Com , 8 71	1932
	Studebaker Pres , 8 82	1933
	Studebaker, Pres , 8, C	1934
E 253	Stutz, 8, BB	1928
E 254	Stutz, 8, M	1929
	Stutz 8 MA	1930
	Stutz, 8 MB	1930
	Stutz 8 MA	1931
	Stutz 8 MB	1931
	Stutz, 8 SV16	1932
	Stutz, SV16	1933
	Stutz, 8, SV16	1934
E 255	Stutz, 8 DV32	1932
	Stutz, DV32	1933
	Stutz, 8, DV32	1934
E 258	Viking, V29, V30	1930
E 259	Whippet, 4	1927
E 260	Whippet, 6	1927
E 261	Whippet, 4 96	1928
E 262	Whippet, 4 96A	1929
	Whippet, 4, 96A	1930
E 263	Whippet, 6, 98	1928
	Whippet, 6, 98A	1929
E 264	Willys 6, 98B	1930
	Willys Six, 97	1931
	Willys Six 98D	1931
	Willys-Overland, 6 90	1933
E 265	Studebaker 6, 56	1932
E 266	Studebaker, Comm , 8, 82	1933
E 267	Chrysler, 8	1931
E 268	Willys, 77	1933
	Willys, 77	1934
E 269	Auburn Std 6, 52X	1934
	Auburn, Cust 6, 52Y	1934
E 270	Auburn, Std 8, 50X	1934
E 271	Auburn, Cust 8, 50Y	1934
E 272	Buick 34 40	1934
E 273	Buick, 34 50	1934
E 274	Buick, 34 60	1934
E 275	Cadillac, V8, 355D	1934
E 276	Cadillac, V12, 370D	1934
E 277	Cadillac, V16, 452D	1934
E 278	Chevrolet, Std 6, DC	1934
E 279	Chevrolet, Mast 6, DA	1934
E 280	Chrysler, 6, CA	1934
E 281	Chrysler, 8, CU	1934
E 282	Chrysler Imp 8 CV	1934
	Chrysler, Imp Cust 8, CX	1934
E 283	DeSoto, 6, SE	1934
E 284	Dodge, 6, DR, DS	1934
E 285	Ford, V8, 40 34	1934
E 286	Graham, Super Spec 8, 69S	1934
	Graham, Super Cust 8, 69	1934
F 287	Hudson, 8	. 1934
F 288	Hupmobile, 6 417W	1934
E 289	Hupmobile 6, 421J	1934
E 290	Hupmobile 8, 427T	1934
E 291	LaSalle, 8, 350	1934
E 292	Lincoln, V12	1934
E 293	Nash, Big 6 1220	1934
E 294	Oldsmobile, 6, F34	1934
E 295	Oldsmobile 8, L34	1934
E 296	Pierce Arrow, 840A	1934
E 297	Plymouth 6 PF PG	1934
	Plymouth, De Luxe 6 PE	1934
E 298	Pontiac, 8, 603	1934
E 299	Studebaker, Dict 6 A	1934
F 300	Studebaker, Comm 8, B	1934
F 301	Terraplane, 6	1934

Interchangeable Clutch Throwout Bearings

DIRECTIONS—All Clutch Throwout Bearings listed under one number, such as B4, are interchangeable. Also read directions at top of page 74.

B 1
Studebaker, 6, 53 1930
Studebaker, Dict., 6, GL 1930
Studebaker, 6, 54 1931
Studebaker, Dict., 8-61 1931
Studebaker, 6, 55 1932
Studebaker, Dict., 8, 62 1932
Studebaker, Com., 8, 71 1932
Studebaker, Comm. 8, B 1934
Studebaker, Pres. 8, C 1934

B 3
Dodge Bros., 4, 128 1928

B 4
Elcar, 75 1929
Elcar, 95 1929
Elcar, 96 1929
Elcar, 120 1929
Moon, 6-72 1929
Studebaker, Standard 6, EU 1927
Studebaker, Special 6 1927
Studebaker, Big 6, ES 1927
Studebaker, Dict., 6, EU 1927
Studebaker, Comm., 6, EW 1927
Windsor, 8-82 1929
Windsor, 8-92 1929
Windsor, 6-69 1929
Windsor, 6-72 1929
Windsor, 6-77 1929

B 6
Peerless, 6-61 1929
Peerless, 6-61A 1929
Studebaker, Dictator, 6, GE 1928

B 7
Peerless, 6-81 1929

B 8
Studebaker, Com'der, 6, GB 1928
Studebaker, President, 8, FA 1928
Studebaker, Pres., 6, ES 1928
Studebaker, Comm., 6, GH 1928

B 9
Pierce-Arrow, 6, 81 1928
Reo Wolverine, 6, B 1928
Reo Flying Cloud, 6, A 1928

B 13
Franklin, Airman, 12A & B 1928
Franklin, 130 1929
Franklin, 135 1929
Franklin, 137 1929
Franklin, 145 1930
Franklin, 147 1930
Franklin, 15 1931
Franklin, Olympic, 18 1932
Franklin, 16 1932
Franklin, 12, 17 1932

B 15
Peerless, Std. 8, A 1930
Peerless, Master 8, B 1930
Peerless, Custom 8, C 1930
Peerless, Std. 8, A 1931
Peerless, Master 8, B 1931
Peerless, Custom 8, C 1931
Peerless, Master 8, B 1932
Peerless, Custom 8, C 1932

B 17
Reo, S 1932

B 18
Hupmobile, 326 1933
Hupmobile, 8, 426I 1934
Reo, 6, S2 1933
Reo, 6, S-4 1934

B 19
Durant, Four, 4 1929
Star, 4, M 1928

B 20
Reo, 8, 31 1932
Reo, 8, 35, 52 1932
Reo, Royale, N1, 2 1933
Reo, Royale, 8, N1, 2 1934

B 21
Stearns-Knight, H, 8-90 1929
Stearns-Knight, J, 8-90 1929

B 23
Stearns-Knight, H, 8-90 1930
Stearns-Knight, J, 8-90 1930

B 24
Cadillac, V8, 341A 1928
Cadillac, V8, 341B 1929
Cadillac, V8, 353 1930
Cadillac, V16, 452 1930
Cadillac, V8, 355A 1931
Cadillac, V12, 370A 1931
Cadillac, V16, 452A 1931
Cadillac, V8, 355B 1932
Cadillac, V12, 370B 1932
Cadillac, V16, 452B 1932
Cadillac, V8, 355C 1933
Cadillac, V12, 370C 1933
Cadillac, V16, 452C 1933
Duesenberg, J 1933
Duesenberg, J 1934
Franklin, Olympic, 18B 1933
Franklin, Airman, 16B 1933
Franklin, 12, 17B 1933
Franklin, Olympic 6, 18 1934
Franklin, Airman 6, 16 1934
Franklin, 12, 17 1934
Hupmobile, 8, M, Century 1928
Kissel, 6, 73 1929
Kissel, 8, 95 1929
Kissel, 8, 126 1929
Kissel, 6, 73 1930
Kissel, 8, 95 1930
Kissel, 8, 126 1930
LaSalle, V8, 328 1929
LaSalle, V8, 340 1930
LaSalle, V8, 345A 1931
LaSalle, V8, 345B 1932
LaSalle, V8, 345C 1933
Lincoln, V8 1932
Lincoln, V12 1932
Lincoln, V12-136 1933
Lincoln, V12-145 1933
Lincoln, V12 1934
Packard, 8, 626 1929
Packard, 8, 633 1929
Packard, 8, 640 1929
Packard, 8, 645 1929
Packard, 8, 726 1930
Packard, 8, 733 1930
Packard, 8, 740 1930
Packard, 8, 745 1930
Packard, 8, 826 1931
Packard, 8, 833 1931
Packard, 8, 840 1931
Packard, 8, 845 1931
Packard, Light 8, 900 1932
Packard, 8, 901 1932
Packard, 8, 902 1932
Packard, 8, 903 1932
Packard, 8, 904 1932
Packard, Twin 6, 905, 6 1932
Packard, 8, 1001 1933
Packard, 8, 1002 1933
Packard, Super 8, 1003, 4 1933
Packard, 12, 1005, 6 1933
Packard, 8, 1100, 1, 2 1934
Packard, Super 8, 1103, 4, 5 1934
Packard, 12, 1107, 8 1934
Pierce-Arrow, 43 1931
Pierce-Arrow, 42 1931
Pierce-Arrow, 41 1931
Pierce-Arrow, 54 1932
Pierce-Arrow, 53 1932
Pierce-Arrow, 52 1932
Pierce-Arrow, 51 1932
Pierce-Arrow, 836 1933
Pierce-Arrow, 1236 1933
Pierce-Arrow, 1242 1933
Pierce-Arrow, 1247 1933
Pierce-Arrow, 836A 1934
Pierce-Arrow, 840A 1934
Pierce-Arrow, 1240A 1934
Pierce-Arrow, 1248A 1934
Reo Mate, 6, B2 1929
Reo Master, 6, C 1929
Reo, 6, 15 1930
Reo, 6, 20 1930
Reo, 6, 25 1930
Reo, 6, 15 1931
Reo, 6, 20 1931
Reo, 6, 25 1931
Reo, 8, 30, 31 1931
Reo, 8, 35 1931
Reo, 6-21, 25 1932
Reo, 8-21 1932
Reo, 8-25 1932
Stutz, 8, BB 1928
Stutz, 8, M 1929
Stutz, 8, MA 1930
Stutz, 8, MB 1930
Stutz, 6, LA 1931
Stutz, 8, MA 1931
Stutz, 8, MB 1931
Stutz, 8, SV16 1932
Stutz, 8, DV32 1932
Stutz, SV16 1933
Stutz, DV32 1933
Stutz, 8, SV16 1934
Stutz, 8, DV32 1934

B 26
Durant, 6-10 1931
Durant, 6-12 1931
Durant, 6-14 1931

B 45
Essex, Super 6 1928
Essex, Challenger, 6 1929
Essex, Challenger, 6 1930
Essex, Challenger, 6 1931
Essex, Greater 6 1932
Hudson, Super 6 1929
Hudson, Great 8 1930
Hudson, 8 1931
Hudson, 8 1932
Hudson, Super 6 1933
Hudson, 8 1933

B 47
Hudson, Super 6 1928

B 60
Dodge Bros., 6 DB 1930
Dodge Bros., Senior 6 1930

B 73
Lincoln, V8 1928
Lincoln, V8 1929
Lincoln, V8 1930

B 77
Nash, Std. 6, 320 1928
Nash, Std. 6, 420 1929
Nash, Single 6, 450 1930

B 78
Dodge Bros., 4, 124 1927

B 82
Nash, 8-90 1931
Nash, 990 1932
Nash, Adv. 8, 1180 1933
Nash, Amb. 8, 1190 1933
Nash, Adv. 8, 1280 1934
Nash, Amb. 8, 1290 1934

B 83
Durant, 614 1930
Durant, 619 1931

B 89
Duesenberg, J 1929
Duesenberg, J 1930
Duesenberg, J 1931
Duesenberg, J 1932
Packard, 6, 526 1928
Packard, 6, 533 1928
Packard, 8, 443 1928
Pierce-Arrow, 6, 36 1928

B 90
Marmon, 88, CC 1931

B 91
Marmon, Big 8-89 1930
Marmon, 16 1931
Marmon, 16 1932
Marmon, 16 1933

B 98
DeVaux, 6-75 1932

B 100
Buick, 8-50 1931

B 101
Nash, 6-60 1931
Nash, 8-70 1931
Nash, 8-80 1931
Nash, 960 1932
Nash, 970 1932
Nash, 980 1932
Nash, 1060, Big 6 1932
Nash, 1070, Std. 8 1932
Nash, 1080, Spc. 8 1932

B 102
Buick, 32-50 1932
Buick, 33-50 1933
Buick, 34-40 1934
Buick, 34-50 1934
Chrysler, 6, CI 1932
Chrysler, 8, CP 1932
Chrysler, Imp. 8, CH 1932
Chrysler, Imp. Cust. 8, CL 1932
Chrysler, 6, CO 1933
Chrysler, Royal 8, CT 1933
Chrysler, Imp. 8, CQ 1933
Chrysler, Imp. Cust. 8, CL 1933
Chrysler, 6, CA 1934
Chrysler, 8, CU 1934
Chrysler, Imp. 8, CV 1934
Chrysler, Imp. Cust. 8, CX 1934
Continental Ace, 41A 1933
Continental, 4-41 1934
DeSoto, 8, CF 1931
DeSoto, 6, SC 1932
DeSoto, 6, SD 1933
Dodge, 6, DL 1932
Dodge, 8, DK 1932
Dodge, 8, DO 1933

B 103
Rockne, 6-65 1932
Rockne, 6-75 1932
Rockne, 6, 10 1933
Studebaker, 6, 56 1933
Studebaker, Comm., 8, 73 1933
Studebaker, Pres., 8, 82 1933
Studebaker, Dict. 6, A 1934

B 104
Buick, 32-60 1932
Buick, 32-80 1932
Buick, 32-90 1932
Buick, 33-60 1933
Buick, 33-80 1933
Buick, 33-90 1933
Buick, 34-60 1934
Buick, 34-90 1934
Cadillac, U8, 355D 1934
Cadillac, V12, 370D 1934
Cadillac, V16, 452D 1934

B 107 Dodge, 6, DP 1933

B 108 Continental Beacon, C-400 1933
Continental Flyer, C-600 1933

B 109 Essex Terraplane, 6 1933
Essex Terraplane, 8 1933

B 110 Auburn, 115 1928
Auburn, 8-90 1929
Auburn, 120 1929
Auburn, 125 1930
Auburn, 8-101 1933
Auburn, 8-105 1933
Auburn, Std. 6, 52X 1934
Auburn, Cust. 6, 52Y 1934
Auburn, Std. 8, 50X 1934
Auburn, Cust. 8, 50Y 1934
Blackhawk, L6 1929
Blackhawk, L8 1929
Blackhawk, L6 1930
Blackhawk, L8 1930
Graham-Paige, 610 1928
Graham-Paige, 614 1928
Graham-Paige, 619 1928
Graham-Paige, 629 1928
Graham-Paige, 835 1928
Graham-Paige, 615 1929
Graham-Paige, 827 1929
Graham-Paige, 837 1929
Marmon, 8-69 1930
Marmon, 8-70 1930
Marmon, 70 1931
Peerless, 8, 125 1929
Pierce-Arrow, 125 1929
Pierce-Arrow, 126 1929
Pierce-Arrow, 132, C 1930
Pierce-Arrow, 134, B 1930
Pierce-Arrow, 139, B 1930
Pierce-Arrow, 144, A 1930
Studebaker, Dictator, 6, GE 1929
Studebaker, Com'der, 6, GJ 1929
Studebaker, Com'der, 8, FD 1929
Studebaker, President, 8, FH 1929
Studebaker, President, 8, FE 1929
Studebaker, Dict., 8, FC 1930
Studebaker, Com., 6, GJ 1930
Studebaker, Com., 8, FD 1930
Studebaker, Pres., 8, FH 1930
Studebaker, Pres., 8, FE 1930
Studebaker, Com., 8-70 1931
Studebaker, Pres., 8, 80, 90 1931
Studebaker, Pres., 8, 91 1932
Studebaker, Spd. Pres., 8, 92 1933
Stutz, 6, LAA 1932
Stutz, LAA6 1933

B 111 Auburn, 76 1928
Auburn, 88 1928
Auburn, 6-80 1929
Auburn, 6-85 1930
Erskine American, 6, 51 1928
Erskine, 6, 52 1929
Erskine, 6, 53 1930
Graham-Paige, 612 1929
Graham, Std. 6 1930
Graham, Spc. 6 1930
Graham, Std. 8 1930
Graham, Spec. 8 1930
Graham, Cust. 8, 127 1930
Graham, Cust. 8, 137 1930
Graham, Prosperity 6 1931
Graham, Std. 6 1931
Graham, Spec. 6 1931
Graham, Spec. 8 1931
Graham, Cust. 8 1931
Hupmobile, 6, A, Century 1928
Hupmobile, 6, A, Century 1929
Hupmobile, 6, S, Century 1930
Hupmobile, Cent. 6, S 1931
Hupmobile, Cent. S, L 1931
Hupmobile, 6, 214 1932
Hupmobile, 6, 216 1932
Hupmobile, 8, 218 1932
Hupmobile, 8, 222 1932
Hupmobile, 321 1933
Hupmobile, 322 1933
Hupmobile, 6, 417W 1934
Hupmobile, 6, 421K 1934
Hupmobile, 6, 421A 1934
Hupmobile, 6, 421J 1934
Hupmobile, 8, 422F 1934
Hupmobile, 8, 427T 1934

B 112 Oakland, 6, 212 1928

B 113 Durant, 55 1928
Durant, 65 1928
Durant, 75 1928
Durant, Six, 60 1929
Durant, Six, 66 1929
Durant, Six, 70 1929
Durant, 63 1930
Durant, 617 1930

B 114 Chrysler, 62 1928
Chrysler, 72 1928
Chrysler, 65 1929
Chrysler, 75 1929
Chrysler, Imp. 6 1929
Chrysler, Imp. 6 1930
Chrysler, Imp. 8, CG 1931
Chrysler, 77 1930
Dodge Bros., 6, DA 1929

B 115 Ford, A 1929
Ford, A 1930
Ford, A 1931
Ford, A 1932
Ford, B 1932
Ford, V8 1932
Ford, V8-40 1933
Ford, V8, 40-34 1934
Graham, Std. 6, 68 1934
Graham, De Luxe 6, 68 1934
Graham, Spec. 8, 67 1934
Graham, Super Spc. 8, 69S 1934
Graham, Std. 8, 67 1934
Graham, Super, Spc. 8, 69 1934
LaFayette, 6, 110 1934
Lincoln, V8 1931
Nash, Big 6, 1120 1933
Nash, Std. 8, 1130 1933
Nash, Spc. 8, 1170 1933
Nash, Big 6, 1220 1934

B 116 Locomobile, 86 1929
Locomobile, 88 1929

B 117 Chrysler, 80L 1928

B 118 Chrysler, 52 1928
Chrysler, 66 1930
Chrysler, 70 1930
Chrysler, 66 1931
Chrysler, 70 1931
DeSoto, 6, K 1929
DeSoto, 8, CF 1930
Dodge Bros., 6, DD 1930
Plymouth, 4, Q 1929
Plymouth, 4U, U30 1930

B 119 Chrysler, 8, Std., CD 1930
Chrysler, 8, CD 1931
Chrysler, 6, CJ 1931
Chrysler, 6, CM 1931
DeSoto, 6, CK 1930
DeSoto, 6, SA 1931
DeSoto, 6, SE 1934
Dodge Bros., 8, DC 1930
Dodge Bros., 6, DH 1931
Dodge Bros., 8, DG 1931
Dodge, 6, DR, DS 1934
Plymouth, 4, PA 1931
Plymouth, 4, PB 1932
Plymouth, 6, PC 1932
Plymouth, Std. 6, PC 1933
Plymouth, DL, 6, PD 1933
Plymouth, 6, PF, PG 1934
Plymouth, De Luxe 6, PE 1934

B 120 Buick, 115 1928
Buick, 120 1928
Buick, 128 1928
Buick, 116 1929
Buick, 121 1929
Buick, 129 1929
Buick, 40 1930
Buick, 50 1930
Buick, 60 1930
Buick, 8-60 1931
Buick, 8-80 1931
Buick, 8-90 1931
LaSalle, V8, 303 1928
Whippet, 4, 96 1927
Whippet, 6 1927
Whippet, 4, 96 1928
Whippet, 6, 98 1928
Whippet, 4, 96A 1929
Whippet, 6, 98A 1929
Whippet, 4, 96A 1930
Willys, 6, 98B 1930
Willys Six, 97 1931
Willys, 6, 98D 1931
Willys, 8-80 1931
Willys, 8-80D 1931
Willys, 77 1933
Willys, 77 1934
Willys-Overland, 6-90 1932
Willys-Knight, 56 1928
Willys-Knight, 70B 1929
Willys-Knight, 87 1930
Willys-Knight, 70B 1930
Willys-Knight, 95 1932

B 122 Willys-Overland, 8-88 1932
Willys-Knight, 70A 1928
Willys-Knight, 66A 1928
Willys-Knight, 66B 1929
Willys-Knight, 66B 1930
Willys-Knight, 66D 1931
Willys-Knight, 66D 1932

B 123 Chandler, 65 1929
Chandler, Big 6 1929
Chandler, 75 1929
Chandler, 85 1929
Dodge Bros., Victory 6 1928
Dodge Bros., Standard 6 1928
Dodge Bros., Senior 6 1928
Dodge Bros., Senior 6 1929

B 126 Oakland, AA6 1929
Oakland, 8, 101 1930
Oakland, 8, 301 1931
Pontiac, 6-28 1928
Pontiac, 6-29 1929
Pontiac, 6-30 1930
Pontiac, 6, 401 1931
Pontiac, 6, 402 1932
Pontiac, 8, 302 1932

B 127 Marmon, 8, 78, N 1928
Marmon, 8, 68 1929
Marmon, 8, 78 1929
Marmon, 8, Roosevelt 1930
Roosevelt 1929
Roosevelt 1930

B 128 Graham-Paige, 621 1929
Marmon, 8-125, HH 1932

B 129 Auburn, 8-95 1930
Auburn, 8-98 1931
Auburn, 8-100 1932
Auburn, 12-160 1932
Auburn, 12-161 1933
Auburn, 12-165 1933
Cord, 8, L-29 1930
Cord, 8, L-30 1931
Cord, 8, L-30 1932

B 130 Hupmobile, 8, M, Century 1929
Hupmobile, 8, C 1930
Hupmobile, 8, H 1930
Hupmobile, 8, C 1931
Hupmobile, 8, H 1931
Hupmobile, 8, U 1931
Hupmobile, 8, 221 1932
Hupmobile, 8, 225 1932
Hupmobile, 8, 226 1932
Hupmobile, 8, 237 1932

B 136 Austin, A 1931
Austin, A 1932
Austin 1933
Austin 1934

B 145 Graham, 6, 56, 58 1932
Graham, 8, 57 1932
Graham, Std. 6, 65 1933
Graham, Std. 8, 64 1933
Graham, Cust. 8, 64 1933

B 146 Ford, A 1928

B 180 Nash, Spec. 6, 330 1928
Nash, Adv. 6, 360 1928
Nash, Spec. 6, 430 1929
Nash, Adv. 6, 460 1929
Nash, Twin Ign., 6, 480 1930
Nash, Twin Ign., 8, 490 1930
Nash, 1090, Adv. 8 1932

B 198 Chevrolet, 4, AA 1927
Chevrolet, 4, AB 1928

B 200 LaSalle, 8, 350 1934
Marquette, 6, 30 1930
Oldsmobile, 6, F28 1928
Oldsmobile, 6, F29 1929
Oldsmobile, 6, F30 1930
Oldsmobile, 6, F31 1931
Oldsmobile, 6, F32 1932
Oldsmobile, 8, L32 1932
Oldsmobile, 6, F33 1933
Oldsmobile, 8, L33 1933
Oldsmobile, 6, F34 1934
Oldsmobile, 8, L34 1934

B 201 Viking, V29, V30 1930

B 202 Chevrolet, 6, AC 1929
Chevrolet, 6, AD 1930
Chevrolet, 6, AE 1931
Chevrolet, 6, BA 1932

B 203 Chevrolet, Std. 6, CC 1933
Chevrolet, Mast. 6, CA 1933
Chevrolet, Std. 6, DC 1934
Chevrolet, Mast. 6, DA 1934

B 205 Stearns-Knight, M, 6-80 1929
Stearns-Knight, N, 6-80 1929

B 222 Pontiac, 6-27 1927

B 223 Pontiac, 8, 601 1933
Pontiac, 8, 603 1934

B 224 Hudson, 8 1934
Terraplane, 6 1934

Interchangeable Clutch Shaft Bearings

DIRECTIONS—All Clutch Shaft Bearings listed under one number, such as B11, are interchangeable. The letter T indicates a taper roller bearing and B indicates a ball or roller bearing. The first number after the T is for the cup and the second number is for the cone. Also read directions at top of page 74.

B 11	Dodge Bros , Senior 6	1930
	Franklin, 135	1929
	Franklin, 137	1929
	Gardner, 136	1930
	Gardner, 140	1930
	Gardner, 136	1931
	Gardner, 148	1931
	Graham Paige 614	1928
	Graham Paige 615	1929
	Graham Spc 6	1930
B 16	Stearns Knight, H, 8 90	1929
	Stearns Knight, J 8 90	1929
	Stearns Knight H, 8 90	1930
	Stearns Knight, J, 8 90	1930
B 27	Hupmobile, 6, A, Century	1928
	Hupmobile, 8, M, Century	1928
	Hupmobile, 6, A, Century	1929
	Hupmobile, 8, M, Century	1929
	Hupmobile, 8, C	1930
	Marmon, 8 79	1930
	Nash, Std 6 320	1928
	Nash, Std 6, 420	1929
	Nash Single 6, 450	1930
	Peerless, 6 61	1929
	Peerless, 6 61A	1929
	Peerless, 6 81	1929
	Peerless, 8, 125	1929
B 28	Cadillac, V8, 341B	1929
	Cadillac, V8, 353 .	1930
	Cadillac, V16, 452	1930
	Cadillac, V8, 355A	1931
	Cadillac, V12, 370A	1931
	Cadillac, V16 452A	1931
	Graham Paige, 619	1928
	Graham-Paige, 629	1928
	Graham-Paige, 835	1928
	Graham Paige, 621	1929
	Graham Paige, 827	1929
	Graham Paige, 837	1929
	Graham, Spec 8	1930
	Graham, Cust 8, 127	1930
	Graham, Cust 8, 137	1930
	LaSalle, V8, 328	1929
	LaSalle, V8, 340	1930
	LaSalle, V8, 345A	1931
B 53	Austin, A	1931
	Austin, A	1932
	Austin	1933
	Austin	1934
	Chrysler, 52	1928
	Erskine American 6, 51	1928
	Graham Paige, 610	1928
B 54	Auburn, 76	1928
	Auburn, 6 80	1929
	Auburn, 6 85	1930
	Chandler, 65	1929
	Chevrolet, 4 AB	1928
	Chevrolet 6, AC	1929
	Chevrolet, 6, AD	1930
	Chrysler 6 CJ	1931
	DeSoto, 6, K	1929
	DeVaux, 6 75	1932
	Durant, 55	1928
	Durant, 65	1928
	Durant, Four, 4	1929
	Durant, Six, 60 .	1929
	Durant, 63	1930
	Durant, 614	1930
	Durant, 6 10	1931
	Durant, 6 12	1931
	Durant, 6 14	1931
	Elcar, 75 .	1929
	Elcar, 95	1929
	Elcar 96	1929
	Erskine, 6, 52	1929
	Erskine, 6, 53	1930
	Essex, Super 6	1928
	Essex, Challenger, 6	1929
	Essex, Challenger 6	1930
	Essex, Challenger 6	1931
	Graham Paige, 612	1929
	Graham, Std 6	1930
	Graham, Prosperity 6	1931
	Graham, Std 6	1931
	Graham, 6 56, 58	1932
	Hudson, Great 8	1930
	Hudson, 8	1931
	Jordan, 8 80 T	1930
	Jordan 8 80 T	1931
	Marmon 8, 68	1929
	Marmon, 8, Roosevelt	1930
	Marmon, 8-69	1930
	Marmon, 70	1931
	Moon, 6 72	1929
	Peerless, Std 8, A	1930
	Peerless, Std 8, A	1931
	Plymouth, 4, Q	1929
	Plymouth, 4, U, U30	1930
	Pontiac, 6-27	1927
	Pontiac, 6 28	1928
	Pontiac, 6 29	1929
	Pontiac, 6 30	1930
	Roosevelt	1929
	Roosevelt	1930
	Star, 4 M	1928
	Studebaker, Dictator, 6, GE	1929
	Studebaker, Com'der, 6, GJ	1929
	Studebaker, Com'der, 8, 1 D	1929
	Studebaker, 6, 53	1930
	Studebaker, Dict , 6, GL	1930
	Studebaker, Dict 8, FC	1930
	Studebaker, Com , 6, GJ	1930
	Studebaker, Com , 8, FD	1930
	Whippet, 4, 96	1927
	Whippet, 4, 96	1928
	Whippet, 4, 96A	1929
	Willys, 6, 98B	1930
	Willys Six, 97	1931
	Willys Six 98D	1931
	Willys Knight, 95	1932
	Willys Overland, 6 90	1932
	Windsor, 6 69	1929
	Windsor, 6 72	1929
	Windsor, 6 77	1929
B 55	Auburn, 120	1929
	Auburn, 125	1930
	Chandler, 75	1929
	Ford, A	1928
	Ford, A	1929
	Franklin, Airman, 12A & B	1928
	Franklin, 130	1929
	Hupmobile, Cent 6, S	1931
	Hupmobile, 6 214	1932
	Marmon, 8, 78	1929
	Marquette, 6, 30	1930
	Oakland, 6, 212	1928
	Oakland, AA6	1929
	Oakland, 8, 101	1930
	Oldsmobile, 6, F28	1928
	Oldsmobile 6, F29	1929
	Oldsmobile, 6 F30	1930
	Pierce Arrow 6 81	1928
	Pierce Arrow, 125	1929
	Pierce Arrow, 126	1929
	Studebaker, 6, 54 .	1931
	Whippet, 6	1927
	Whippet 6, 98	1928
	Whippet 6, 98A	1929
	Willys 8 80	1931
	Willys, 8 80D	1931
	Willys, 77	1933
	Willys, 77	1934
	Willys Overland 8 88	1932
	Willys Knight, 56	1928
	Willys Knight, 70A	1928
	Willys Knight 70B	1929
	Willys Knight, 87	1930
	Willys Knight, 70B	1930
	Willys Knight, 66D	1931
	Willys Knight, 66D	1932
B 56	Auburn, 88	1928
	Auburn, 115	1928
	Auburn, 8 90	1929
	Auburn, 8 95	1930
	Buick, 115	1928
	Buick, 116	1929
	Chrysler, 62	1928
	Chrysler, 72	1928
	Chrysler, 65	1929
	Chrysler, 75	1929
	Chrysler, 66	1930
	Chrysler, 66	1931
	Dodge Bros , 6, DA	1929
	Dodge Bros , 6, DB	1930
	Elcar, 120	1929
	Franklin, 145	1930
	Franklin, 147	1930
	Franklin, 15	1931
	Gardner, 120	1929
	Gardner, 125	1929
	Gardner, 130	1929
	Gardner 150	1930
	Hupmobile, 8, H	1930
	Jordan, 6 E	1929
	Jordan, 8, G	1929
	Jordan, 8, 90 G	1930
	Jordan, 8 90, G	1931
	Kissel 6 73	1929
	Kissel, 8, 95	1929
	Kissel 8, 126	1929
	Kissel 6 73	1930
	LaSalle, V8, 303 .	1928
	Locomobile, 86	1929
	Locomobile, 88	1929
	Marmon, Big 8 89	1930
	Reo Wolverine, 6, B	1928
	Reo Flying Cloud, 6, A	1928
	Reo Mate, 6, B2	1929
	Reo Master, 6, C	1929
	Reo, 6 15	1930
	Reo 6 20	1930
	Reo, 6, 25	1930
	Reo, 6, 15	1931
	Reo, 6, 20	1931
	Reo, 6, 25	1931
	Reo, 6 21 25	1932
	Reo 8 21	1932
	Reo, 8 25	1932
	Studebaker, Big 6 ES	1927
	Studebaker, Pres , 6 ES	1928
	Studebaker, Pres , 8, FH	1928
	Studebaker, Pres , 8, FH	1929
	Studebaker, Pres , 8, FE	1929
	Studebaker, Pres , 8 FH	1930
	Studebaker Pres , 8, FE	1930
	Stutz, 8, BB	1928
	Windsor, 8 82	1929
	Windsor, 8-92	1929
B 57	Blackhawk, L6	1929
	Blackhawk, L8	1929
	Blackhawk, L6	1930
	Blackhawk, L8	1930
	Buick, 120	1928
	Buick, 128	1928
	Buick, 121	1929
	Buick 129	1929
	Cadillac, V8, 341A	1928
	Chrysler, 80L	1928
	Gardner, 158	1931
	Graham, Spec 6	1931
	Graham, Spec 8	1931
	Graham, Cust 8	1931
	Hupmobile, Cent 8, L	1931
	Hupmobile, 8 C	1931
	Hupmobile 8, 218	1932
	Hupmobile, 8 221	1932
	Peerless, Master 8 B	1930
	Peerless, Custom 8, C	1930
	Peerless, Master 8, B	1931
	Peerless, Custom 8, C	1931
	Peerless, Master 8, B	1932
	Peerless, Custom 8, C	1932
	Pierce Arrow, 132, C	1930
	Pierce Arrow, 134 B	1930
	Pierce Arrow, 139 B	1930
	Pierce Arrow, 144, A	1930
	Reo, 8, 30, 31	1931
	Reo, 8, 35	1931
	Reo, 8, 31	1932
	Reo 8, 35, 62	1932
	Studebaker, Dict , 8 61	1931
	Studebaker, Com 8 70	1931
	Stutz, 8, M	1929
	Stutz, 6 LA	1931
	Stutz, 8, MA	1931
	Stutz, 8, MB	1931
	Stutz, 6, LAA	1932
	Stutz, LAA6	1933
	Willys Knight 66B	1929
	Willys Knight, 66B	1930
B 58	Duesenberg J	1929
	Duesenberg, J	1930
	Duesenberg, J	1931
	Duesenberg, J	1932
	Duesenberg, J	1933
	Duesenberg J	1934
	Hupmobile 8, H	1931
	Hupmobile, 8 U	1931
	Hupmobile, 8, 225	1932
	Hupmobile, 8, 237	1932
	Packard, 8 726	1930
	Packard, 8 733	1930
	Packard, 8, 740	1930
	Packard, 8, 745	1930
	Packard 8, 826	1931
	Packard 8, 833	1931
	Packard, 8 840	1931
	Packard, 8, 845	1931
	Pierce-Arrow 43	1931
	Stearns Knight M 6 80	1929
	Stearns Knight N 6 80	1929
	Studebaker, Pres , 8 80, 90	1931
	Willys Knight, 66A	1928
B 59	Pierce Arrow 6 36	1928
	Pierce-Arrow 42	1931
	Pierce Arrow, 41	1931
B 63	Chevrolet, 4, AA	1927

	Durant, 75	1928
	Durant, Six 66	1929
	Durant Six 70	1929
	Durant 617	1930
	Kissel, 8, 95	1930
B 64	Kissel 8, 126	1930
	Studebaker, Std 6 EU	1927
	Studebaker, Dict 6 EU	1927
	Studebaker, Comm 6 EW	1927
	Studebaker, Comm 6, GH	1928
	Studebaker Dictator, 6 GE	1928
	Studebaker Comm 6, GB	1928
	Stutz, 8, MA	1930
	Stutz, 8, MB	1930
B 65	Chandler, Big 6	1929
	Chandler 85	1929
	Hudson, Super 6	1928
	Hudson, Super 6	1929
	Studebaker, Special 6	1927
B 66	Lincoln, V8	1928
	Lincoln, V8	1929
	Lincoln, V8	1930
B 85	Essex Terraplane, 6	1933
	Essex Terraplane, 8	1933
	Hudson 8	1934
	Terraplane, 6	1934
B 86	Chevrolet, 6, AE	1931
	Essex Greater 6	1932
	Hudson, 8	1932
	Hudson, Super 6	1933
	Hudson 8	1933
	Pontiac, 6, 401	1931
B 87	Chevrolet 6 BA	1932
	Chevrolet Mast 6, CA	1933
	Chevrolet, Mast 6, DA	1934
	Ford A	1930
	Ford A	1931
	Ford A	1932
	Pontiac 8 601	1933
	Pontiac, 8, 603	1934
B 88	Buick, 40	1930
	Buick 50	1930
	Buick, 60	1930
	Buick 8 50	1931
	Buick, 8 60	1931
	Buick 8 80	1931
	Buick, 8 90	1931
B 93	Graham Std 8	1930
B 94	Lincoln, V8	1931
	Lincoln V8	1932
	Lincoln V12	1932
	Lincoln, V12 136	1933
	Lincoln V12 145	1933
	Lincoln, V12	1934
B 135	Marmon, 16	1931
	Marmon 16	1932
	Marmon, 16	1933
B 146	Chrysler 8, CP	1932
B 147	Chrysler 8 Std, CD	1930
	Chrysler, 8 CD	1931
B 148	DeSoto, 6 CK	1930
	DeSoto, 8 CF	1930
	DeSoto, 6 SA	1931
	Dodge Bros 6, DD	1930
	Chrysler Imp 8 CG	1931
	Chrysler, 6 CM	1931
	Dodge Bros, 8 DC	1930
	Dodge Bros, 6 DH	1931
	Dodge Bros, 8 DG	1931
	Plymouth, 4, PA	1931
B 149	Cord 8, L-29	1930
	Cord, 8, L 30	1931
	Cord, 8 L 30	1932
	Dodge Bros, 4 124	1927
	Dodge Bros, 4 128	1928
	Dodge Bros, Victory 6	1928
	Dodge Bros Standard 6	1928
	Dodge Bros Senior 6	1928
	Dodge Bros, Senior 6	1929
	Reo, S	1932
	Viking, V29, V30	1930
B 150	Chrysler, Imp 8 CH	1932
	Chrysler, Imp Cust 8, CL	1932
B 151	Chrysler Imp 6	1929
	Chrysler 70	1930
	Chrysler 77	1930
	Chrysler Imp 6	1930
	Chrysler, 70	1931
B 152	Buick, 34 40	1934
	Buick, 34 50	1934
	Buick 34 60	1934
	Buick 34 90	1934
	Oldsmobile 6 F32	1932
	Oldsmobile, 8 L33	1932
	Oldsmobile 6 F33	1933
	Oldsmobile 8, L33	1933
	Oldsmobile, 6 F34	1934
	Oldsmobile 8 L34	1934
	Pontiac, 6, 402	1932
	Pontiac, 8 302	1932
B 153	Oakland 8, 301	1931
	Oldsmobile, 6, F31	1931
B 154	Auburn, 8 98	1931
	Auburn, 8 100	1932
	Auburn 8 101	1933
	Auburn, 8 105	1933
	Buick, 32 50	1932
	Buick, 32 60	1932
	Buick, 33 50	1933
	Buick 33 60	1933
	Marmon 88 CC	1931
	Marmon, 8 125 HH	1932
B 155	Buick 32 80	1932
	Buick, 32 90	1932
	Buick 33 80	1933
	Buick 33 90	1933
B 158	Nash Std 8 1130	1933
	Nash, Spec 8 1170	1933
B 161	Nash, Spec 6 330	1928
	Nash, Adv 6 360	1928
	Nash Spec 6 430	1929
	Nash Adv 6 460	1929
	Nash Twin Ign 6 480	1930
	Nash Twin Ign, 8, 490	1930
B 164	Durant 619	1931
	Continental Ace 41A	1933
	Continental 4 41	1934
B 165	Hupmobile 6, 216	1932
B 166	Hupmobile, 8, 222	1932
B 167	Continental Beacon, C 400	1933
	Continental Flyer, C 600	1933
B 168	Ford B	1932
	Ford V8	1932
	Ford, V8 40	1933
	Ford V8, 40 34	1934
	Franklin, Olympic, 18	1932
	Franklin, 16	1932
	Franklin, Airman 16B	1933
	Franklin, Airman, 6, 16	1934
	Graham, 8, 57	1932
	Graham, Std 6 65	1933
	Graham Std 6 64	1933
	Graham, Cust 8 64	1933
	Graham, Std 6 68	1934
	Graham, De Luxe 6 68	1934
	Graham, Spec 8 67	1934
	Graham, Super Spec 8, 69S	1934
	Graham, Std 8, 67	1934
	Graham Super Cust 8, 69	1934
	Hupmobile 321	1933
	Hupmobile 322	1933
	Hupmobile, 6, 417W	1934
	Hupmobile 6 421K	1934
	Hupmobile 6 421A	1934
	Hupmobile, 6, 421J	1934
	Hupmobile, 8, 422F	1934
	Hupmobile, 8, 427 F	1934
	Rockne, 6 65	1932
	Rockne, 6 75	1932
	Rockne 6 10	1933
	Studebaker 6 55	1932
	Studebaker, Dict 8, 62	1932
	Studebaker Com 8, 71	1932
	Studebaker 6 56	1933
	Studebaker, Comm 8, 73	1933
	Studebaker, Pres 8, 82	1933
	Studebaker, Dict 6, A	1934
	Studebaker Comm 8 B	1934
	Studebaker, Pres 8, C	1934
B 169	Packard Light 8, 900	1932
	Packard 8, 901	1932
	Packard 8 902	1932
	Packard, 8, 903	1932
	Packard, 8, 904	1932
	Packard, Twin 6, 905, 6	1932
	Packard 8 1001	1933
	Packard 8, 1002	1933
	Packard, Super 8 1003, 4	1933
	Packard 12 1005 6	1933
	Packard, 8 1100 1 2	1934
	Packard, Super 8, 1103 4 5	1934
	Packard, 12, 1107 8	1934
B 170	Franklin, 12, 17	1932
	Franklin, 12 17B	1933
	Franklin 12 17	1934
	Pierce Arrow, 54	1932
	Pierce Arrow, 53	1932
	Pierce Arrow, 52	1932
	Pierce Arrow 51	1932
	Pierce Arrow 836	1933
	Pierce Arrow 1236	1933
	Pierce Arrow, 1242	1933
	Pierce Arrow, 1247	1933
	Pierce-Arrow 836A	1934
	Pierce Arrow, 840A	1934
	Pierce Arrow, 1240A	1934
	Pierce Arrow 1248A	1934
	Studebaker, Pres 8 91	1932
	Studebaker, Spd Pres, 8, 92	1933
B 172	Chevrolet, Std 6, CC	1933
	Chevrolet, Std 6, DC	1934
B 173	Auburn, 12 161	1933
	Auburn, 12 165	1933
	Auburn, Std 6 52X	1934
	Auburn, Cust 6 52Y	1934
	Auburn, Std 8, 50X	1934
	Auburn, Cust 8, 50Y	1934
	Chrysler, 6 CA	1934
	DeSoto, 6, SE	1934
	Dodge, 6, DP	1933
	Dodge, 6, DR, DS	1934
	La Salle, 8, 350	1934
	Plymouth Std 6, PC	1933
	Plymouth DL 6 PD	1933
	Plymouth, 6 PF, PG	1934
	Plymouth, De Luxe 6, PE	1934
B 174	Chrysler 6 CI	1932
	Chrysler, 6 CO	1933
	Chrysler, Royal 8, CT	1933
	Chrysler, Imp 8, CQ	1933
	Chrysler 8, CU	1934
	Chrysler, Imp 8, CV	1934
	DeSoto, 8, CF	1931
	DeSoto, 6, SC	1932
	DeSoto, 6, SD	1933
	Dodge, 6 DL	1932
	Dodge, 8, DK	1932
	Dodge, 8 DO	1933
	Plymouth, 4, PB	1932
	Plymouth, 6, PC	1932
B 175	Auburn, 12 160	1932
	Franklin Olympic, 18B	1933
	Franklin Olympic, 6, 18	1934
	Hupmobile, 8 226	1932
	Hupmobile, 326	1933
	Hupmobile, 8, 426I	1934
	Reo, 6, S2	1933
	Reo, 6 S 4	1934
	Stutz, 8, SV16	1932
	Stutz 8 DV32	1932
	Stutz, SV16	1933
	Stutz, DV32	1933
	Stutz, 8, SV16	1934
	Stutz, 8, DV32	1934
B 176	Chrysler Imp Cust 8, CL	1933
	Chrysler Imp Cust 8, CX	1934
B 177	Cadillac, V8 355B	1932
	Cadillac, V12 370B	1932
	Cadillac, V16 452B	1932
	Cadillac, V8, 355C	1933
	Cadillac, V12, 370C	1933
	Cadillac, V16 452C	1933
	Cadillac, V8 355D	1934
	Cadillac, V12 370D	1934
	Cadillac, V16, 452D	1934
	LaSalle V8, 345B	1932
	LaSalle, V8, 345C	1933
B 178	Reo, Royale, N1, 2	1933
	Reo, Royale, 8, N1, 2	1934
B 181	Nash, Adv 8, 1180	1933
	Nash, Adv 8 1280	1934
B 215	Packard, 6, 526	1928
	Packard 6, 533	1928
	Packard, 8, 443	1928
	Packard, 8 626	1929
	Packard 8 633	1929
	Packard, 8, 640	1929
	Packard, 8 645	1929
B 220	Hupmobile, 6, S, Century	1930
T 13-14	Nash, 8 80	1931
T 17-14	LaFayette, 6 110	1934
	Nash 1060, Big 6	1932
	Nash, 1070 Std 8	1932
	Nash, 1080, Spc 8	1932
	Nash 960	1932
	Nash, 970	1932
	Nash, Big 6 1120	1933
	Nash, Big 6, 1220	1934
T 27-28	Nash, 1090, Adv 8	1932
T 134-128	Nash, 8 90	1931
	Nash, 990	1932
T 240-238	Nash, 6 60	1931
	Nash, 8 70	1931
	Nash, 980	1932
T 244-245	Whippet 4, 96A	1930
T 281-283	Nash, Amb 8, 1190	1933
T 282-283	Nash, Amb 8, 1290	1934

Interchangeable Bevel Pinion Shaft Front Bearings

DIRECTIONS—All Bevel Pinion Shaft Front Bearings listed under one number, such as B25, are interchangeable. The letter T indicates a taper roller bearing and B indicates a ball or roller bearing. The first number after the T is for the cup and the second number is for the cone. Also read directions at top of page **74.**

B 25	Chevrolet, 4, AA	1927
	Pontiac, 6-27	1927
	Pontiac, 6-28	1928
B 27	Whippet, 6	1927
	Whippet, 6, 98	1928
B 28	Pierce-Arrow, 836	1933
	Pierce-Arrow, 1236	1933
B 29	Pierce-Arrow, 6, 36	1928
B 36	Stutz, 8, M	1929
	Stutz, 8, MA	1930
	Stutz, 8, MB	1930
	Stutz, 8, MA	1931
	Stutz, 8, MB	1931
B 29	Blackhawk, L6	1929
	Blackhawk, L8	1929
	Blackhawk, L6	1930
	Blackhawk, L8	1930
	Stearns-Knight, H, 8-90	1929
	Stearns-Knight, J, 8-90	1929
	Stutz, 8, BB	1928
	Stutz, 6, LA	1931
	Stutz, 6, LAA	1932
B 65	Stearns-Knight, H, 8-90	1930
	Stearns-Knight, J, 8-90	1930
	Stutz, 8, CV16	1932
	Stutz, 8, DV32	1932
B 96	Chrysler, 8, Std. CD	1930
	Chrysler, 8, CD	1931
	Chrysler, 8, CP	1932
	Chrysler, Royal 8, CT	1933
	Dodge, 3, DK	1932
	Dodge, 8, DO	1933
B 124	Buick, 40	1930
	Buick, 8-60	1931
B 125	Chevrolet, Std. 6, CC	1933
	Chevrolet, Std. 6, DC	1934
B 132	Austin, A	1931
	Austin, A	1932
	Austin	1933
	Austin	1934
	Chevrolet, 6, AD	1930
	Chevrolet, 6, AE	1931
	Chevrolet, 6, BA	1932
	Chevrolet, Mast. 6, CA	1933
	Pontiac, 8, 601	1933
	Pontiac, 8, 603	1934
B 134	Chevrolet, Mast. 6, DA	1934
B 138	Chevrolet, 4, AB	1928
	Chevrolet, 6, AC	1929
B 140	Buick, 115	1928
	Buick, 116	1929
	Buick, 8-50	1931
	Buick, 32-50	1932
	Buick, 33-50	1933
	Buick, 34-50	1934
	Elcar, 75	1929
	LaSalle, 8, 350	1934
	Marmon, 8, 68	1929
	Marmon, 8, 78	1929
	Marmon, 8-69	1930
	Marquette, 6, 30	1930
	Oakland, 6, 212	1928
	Oakland, AA6	1929
	Oakland, 8, 101	1930
	Oakland, 8, 301	1931
	Oldsmobile, 6, F28	1928
	Oldsmobile, 6, F29	1929
	Oldsmobile, 6, F30	1930
	Oldsmobile, 6, F31	1931
	Oldsmobile, 6, F32	1932
	Oldsmobile, 8, L32	1932
	Oldsmobile, 6, F33	1933
	Oldsmobile, 8, L33	1933
	Oldsmobile, 8, L34	1934
	Peerless, Std. 8, A	1930
	Peerless, Std. 8, A	1931
	Pontiac, 6-29	1929
	Pontiac, 6-30	1930
	Pontiac, 6, 401	1931
	Pontiac, 6, 402	1932
	Pontiac, 8, 302	1932
B 141	Buick, 120	1928
	Buick, 128	1928
	Buick, 121	1929
	Buick, 129	1929
	Buick, 50	1930
	Buick, 60	1930
	Buick, 8-80	1931
	Buick, 8-90	1931
	Buick, 32-60	1932
	Buick, 32-80	1932
	Buick, 32-90	1932
	Buick, 33-60	1933
	Buick, 33-80	1933
	Buick, 33-90	1933
	Buick, 34-60	1934
	Buick, 34-90	1934
	Chrysler, 80L	1928
	Chrysler, Imp. 6	1929
	Chrysler, Imp. 6	1930
	Elcar, 95	1929
	Elcar, 96	1929
	Dodge Bros., Std. 6	1928
	Dodge Bros., 6, DA	1929
	Dodge Bros., Senior 6	1929
	Dodge Bros., 6, DB	1930
	Dodge Bros., Senior 6	1930
	Franklin, Olympic, 18B	1933
	Franklin, Olympic, 6, 18	1934
	Graham-Paige, 614	1928
	Graham-Paige, 615	1929
	Graham, Spc. 6	1930
	Graham, Std. 8	1930
	Graham, Spc. 8	1930
	Graham, Spc. 8	1931
	Graham, Cust. 8	1931
	Marmon, 8-79	1930
	Marmon, 8-125, HH	1932
	Peerless, Master 8, B	1930
	Peerless, Master 8, B	1931
	Peerless, Master 8, B	1932
	Stearns-Knight, M, 6-80	1929
	Stearns-Knight, N, 6-80	1929
	Reo, Wolverine, 6, B	1928
	Reo, Mate, 6, B2	1929
	Reo, 6, S2	1933
	Reo, 6, S-4	1934
	Viking, V29, V30	1930
	Willys-Knight, 66A	1928
B 142	Cadillac, V8, 355A	1931
	Cadillac, V12, 370A	1931
	Cadillac, V8, 355B	1932
	Cadillac, V12, 370B	1932
	Cadillac, V16, 452B	1932
	Cadillac, V8, 355C	1933
	Cadillac, V12, 370C	1933
	Cadillac, V16, 452C	1933
	Cadillac, V8, 355D	1934
	Cadillac, V12, 370D	1934
	Cadillac, V16, 452D	1934
	Elcar, 120	1929
	Graham-Paige, 619	1928
	Graham-Paige, 629	1928
	Graham-Paige, 835	1928
	Graham-Paige, 621	1929
	Graham-Paige, 827	1929
	Graham-Paige, 837	1929
	Graham, Cust. 8, 127	1930
	Graham, Cust. 8, 137	1930
	LaSalle, V8, 303	1928
	LaSalle, V8, 328	1929
	LaSalle, V8, 340	1930
	LaSalle, V8, 345A	1931
	LaSalle, V8, 345B	1932
	LaSalle, V8, 345C	1933
	Locomobile, 86	1929
	Locomobile, 88	1929
	Marmon, Big 8-89	1930
	Marmon, 88, CC	1931
	Packard, 6, 526	1928
	Packard, 6, 533	1928
	Packard, 8, 626	1929
	Packard, 8, 633	1929
	Packard, 8, 726	1930
	Packard, 8, 733	1930
	Packard, 8, 826	1931
	Packard, 8, 833	1931
	Packard, Light 8, 900	1932
	Packard, 8, 901	1932
	Packard, 8, 902	1932
	Packard, 8, 1001	1933
	Packard, 8, 1002	1933
	Peerless, Custom 8, C	1930
	Peerless, Custom 8, C	1931
	Peerless, Custom 8, C	1932
	Reo, Flying Cloud, 6, A	1928
	Reo, Master 6, C	1929
	Reo, 6, 15	1930
	Reo, 6, 20	1930
	Reo, 6, 25	1930
	Reo, 6, 15	1931
	Reo, 6, 20	1931
	Reo, 6, 25	1931
	Reo, 6-21, 25	1932
	Reo, 8-21	1932
	Reo, 8-25	1932
	Reo, S	1932
B 143	Cadillac, V8, 341A	1928
	Cadillac, V8, 341B	1929
	Cadillac, V8, 353	1930
	Cadillac, V16, 452	1930
	Cadillac, V16, 452A	1931
	Cord, 8, L-29	1930
	Cord, 8, L-30	1931
	Cord, 8, L-30	1932
	Packard, 8, 443	1928
	Packard, 8, 640	1929
	Packard, 8, 645	1929
	Packard, 8, 740	1930
	Packard, 8, 745	1930
	Packard, 8, 840	1931
	Packard, 8, 845	1931
	Packard, 8, 903	1932
	Packard, 8, 904	1932
	Packard, Twin 6, 905, 6	1932
	Packard, Super 8, 1003, 4	1933
	Packard, 12, 1005, 6	1933
	Reo, 8, 30, 31	1931
	Reo, 8, 35	1931
	Reo, 8, 31	1932
	Reo, 8, 35, 62	1932
	Reo, Royale, N1, 2	1933
	Reo, Royale, 8, N1, 2	1934
B 144	Duesenberg, J	1929
	Duesenberg, J	1930
	Duesenberg, J	1931
	Duesenberg, J	1932
	Duesenberg, J	1933
	Duesenberg, J	1934
B 179	Nash, Spec. 6, 330	1928
	Nash, Adv. 6, 360	1928
	Nash, Spec. 6, 430	1929
	Nash, Adv. 6, 460	1929
	Nash, Twin Ign. 6, 480	1930
B 225	Buick, 34-40	1934
T 10-12	Chandler, 85	1929
	Chandler, Big 6	1929
T 15-12	Jordan, 8, 80, T	1930
	Jordan, 8, 90, G	1930
T 65-61	Lincoln, V8	1928
T 71-70	Nash, Amb. 8, 1190	1933
T 102-103	Continental, Beacon, C-400	1933
	Continental, Flyer, C-600	1933
T 108-105	Gardner, 125	1929
	Gardner, 140	1930
T 109-105	Auburn, 76	1928
	Auburn, 88	1928
	Auburn, 115	1928
	Auburn, 6-80	1929
	Auburn, 8-90	1929
	Auburn, 120	1929
	Auburn, 6-85	1930
	Auburn, 8-95	1930
	Auburn, 125	1930
	Auburn, 8-98	1931
	Auburn, 8-100	1932
	Gardner, 120	1929
	Gardner, 130	1929
	Gardner, 136	1930
	Gardner, 150	1930
	Gardner, 136	1931
	Gardner, 148	1931
	Gardner, 158	1931
	Jordan, 8, 80, T	1931
	Jordan, 8, 90, G	1931
	Kissel, 6, 73	1930
	Kissel, 8, 95	1930
	Moon, 6-72	1929
	Peerless, 6-61	1929
	Peerless, 6-61A	1929
	Peerless, 6-81	1929
	Peerless, 8, 125	1929
	Windsor, 8-82	1929
	Windsor, 8-92	1929
	Windsor, 6-69	1929
	Windsor, 6-72	1929
	Windsor, 6-77	1929

T 121-120
Whippet, 4, 96 1927
Whippet, 4, 96 1928
Whippet, 4, 96A 1929
Whippet, 4, 96A 1930

T 123-120
Chrysler, 52 1928
Durant, 55 1928
Durant, 65 1928
Durant, Four, 4 1929
Durant, Six, 60 1929
Durant, Six, 66 1929
Durant, 63 1930
Star, 4, M 1928

T 124-119
Essex, Super 6 1928
Essex, Challenger, 6 1929

T 141-142
DeVaux, 6-75 1932
Durant, 614 1930
Durant, 6-10 1931
Durant, 619 1931
Hupmobile, 6, A, Century....1929

T 141-144
Erskine, 6, 53 1930
Rockne, 6-75 1932
Studebaker, 6, 53 1930
Studebaker, Dict., 6, GL.....1930
Studebaker, 6, 54 1931
Studebaker, Dict., 8-61 1931
Studebaker, 6, 55 1932

T 141-145
Willys-Knight, 70A 1928

T 146-142
Chrysler, 62 1928
Chrysler, 72 1928
Chrysler, 65 1929
Chrysler, 75 1929
Chrysler, 6, CA 1934
DeSoto, 6, SE 1934
Dodge, 6, DR, DS 1934
Graham, Super Cust. 8, 69....1934
Hupmobile, 6, 421J 1934
Hupmobile, 8, 427T 1934
Nash, Big 6, 1220 1934
Nash, Adv. 8, 1280 1934
Plymouth, 6, PF, PG 1934
Plymouth, De Luxe 6, PE....1934
Studebaker, Pres 8, C 1934

T 147-142
Chrysler, 66 1930
Chrysler, 66 1931
Chrysler, 6, CI 1932
Chrysler, 6, CO 1933
DeSoto, 6, CK 1930
DeSoto, 8, CF 1930
DeSoto, 6, SA 1931
DeSoto, 8, CF 1931
DeSoto, 6, SC 1932
DeSoto, 6, SD 1933
Dodge Bros., 6, DD 1930
Dodge Bros., 8, DC 1930
Dodge Bros., 6, DH 1931
Dodge, 8, DG 1931
Dodge, 6, DL 1932
Dodge, 6, DP 1933
Essex, Greater 6 1932

T 147-143
Chrysler, 6, CJ 1931
Chrysler, 6, CM 1931
Graham, Std. 6 1931
Graham, Spec. 6 1931
Graham, 8, 57 1932
Graham, Std. 8, 64 1933
Graham, Cust. 8, 64 1933
Hudson, 8 1932
Hupmobile, 6, S, Century.....1930
Hupmobile, Cent. 6, S 1931
Hupmobile, Cent. 8, L 1931
Hupmobile, 6, 214 1932
Hupmobile, 6, 216 1932
Hupmobile, 8, 218 1932
Hupmobile, 8, 222 1932
Hupmobile, 321 1933
Hupmobile, 322 1933
Hupmobile, 326 1933
Hupmobile, 6, 421K 1934
Hupmobile, 6, 421A 1934
Hupmobile, 8, 422F 1934
Hupmobile, 8, 426I 1934
Nash, Single 6, 450 1930
Nash, 6-60 1931
Nash, 8-70 1931
Nash, 8-80 1931
Nash, 960 1932
Nash, 970 1932
Nash, 980 1932
Nash, 1060, Big 6 1932
Nash, 1070, Std. 8 1932
Nash, 1080, Spc 8 1932
Nash, Big 6, 1120 1933
Nash, Std. 8, 1130 1933
Plymouth, 4, PA 1931
Plymouth, 4, PB 1932
Plymouth, 6, PC 1932
Plymouth, Std. 6, PC 1933
Plymouth, DL, 6, PD 1933

T 148-142
Durant, 75 1928
Durant, Six, 70 1929

T 149-142
Hupmobile, 6, A, Century....1928

T 149-150
Studebaker, Dictator, 6, GE..1929
Studebaker, Com'der, 6, GJ..1929
Studebaker, Com'der, 8, FD..1929
Studebaker, Com., 6, GJ.....1930

T 153-142
Hudson, Super 6 1928
Hudson, Super 6 1929

T 154-142
Auburn, 8-101 1933
Auburn, 8-105 1933
Auburn, Std. 6, 52X 1934
Auburn, Cust. 6, 52Y 1934
Auburn, Cust. 8, 50Y 1934
Graham, Std. 6, 68 1934
Graham, De Luxe 6, 68 1934
Graham, Spec. 8, 67 1934
Graham, Super Spec. 8, 69S..1934
Graham, Std. 8, 67 1934
Hupmobile, 6, 417W 1934
LaFayette, 6, 110 1934
Plymouth, 4, U, U30 1930
Studebaker, Dict. 6, A 1934
Studebaker, Comm. 8, B.....1934
Willys, 8-80D 1931

T 154-143
Continental, Ace, 41A 1933
Continental, 4-41 1934
DeSoto, 6, K 1929
Graham, 6, 56, 58 1932
Graham, Std. 6, 65 1933
Marmon, 8, Roosevelt 1930
Marmon, 70 1931
Plymouth, 4, Q 1929
Rockne, 6-65 1932
Rockne, 6, 10 1933
Roosevelt 1929
Roosevelt 1930
Willys-Overland, 8-88 1932

T 154-155
Graham-Paige, 612 1929
Graham, Std. 6 1930
Graham, Prosperity 6 1931

T 156-143
Hudson, Super 6 1933
Hudson, 8 1933

T 156-142
Hudson, 8 1934
Terraplane, 6 1934

T 173-174
Studebaker, Dict. 8, FC 1930
Studebaker, Com. 8, FD 1930
Studebaker, Com. 8-70.....1931
Studebaker, Dict. 8, 62.....1932
Studebaker, Com. 8, 71.....1932

T 175-174
Chrysler, 8, CU 1934
Chrysler, Imp. 8, CV 1934
Chrysler, Imp. Cust. 8, CX...1934
Studebaker, Std. 6, EU 1927
Studebaker, Dict. 6, EU.....1927
Studebaker, Pres. 6, ES 1928
Studebaker, Comm. 6, GH....1928
Studebaker, Dict. 6, GE.....1928
Studebaker, Com'der 6, GB..1928
Studebaker, Pres. 8, FA.....1928

T 176-174
Chandler, 65 1929
Chandler, 75 1929
Chrysler, 70 1930
Chrysler, 77 1930
Chrysler, 70 1931
Chrysler, Imp. 8, CG 1931
Chrysler, Imp. 8, CH 1932
Chrysler, Imp. Cust. 8, CL...1932
Chrysler, Imp. 8, CQ 1933
Chrysler, Imp. Cust. 8, CL...1933
Hupmobile, 8, M, Century....1928
Hupmobile, 8, M, Century....1929
Hupmobile, 8, C 1930
Hupmobile, 8, C 1931
Hupmobile, 8, 221 1932

T 177-174
Franklin, Airman, 12A & B..1928
Franklin, 130 1929
Franklin, 135 1929
Franklin, 137 1929
Franklin, 145 1930
Franklin, 147 1930
Franklin, 15 1931
Franklin, Olympic, 18 1932
Franklin, 16 1932
Franklin, Airman, 16B 1933
Franklin, Airman, 6, 16.....1934
Hupmobile, 8, H 1930
Hupmobile, 8, H 1931
Hupmobile, 8, U 1931
Hupmobile, 8, 225 1932
Hupmobile, 8, 237 1932
Willys-Knight, 66B 1929
Willys-Knight, 66B 1930
Willys-Knight, 66D 1931
Willys-Knight, 66D 1932

T 182-174
Marmon, 16 1931
Marmon, 16 1932
Marmon, 16 1933
Pierce-Arrow, 125 1929
Pierce-Arrow, 126 1929
Pierce-Arrow, 132, C 1930
Pierce-Arrow, 134, B 1930
Pierce-Arrow, 139, B 1930
Pierce-Arrow, 144, A 1930
Pierce-Arrow, 43 1931
Pierce-Arrow, 42 1931
Pierce-Arrow, 41 1931
Pierce-Arrow, 54 1932
Pierce-Arrow, 53 1932
Pierce-Arrow, 52 1932
Pierce-Arrow, 51 1932
Pierce-Arrow, 1242 1933
Pierce-Arrow, 1247 1933
Pierce-Arrow, 1240 A 1934
Pierce-Arrow, 1248 A 1934
Studebaker, Pres. 8, FH 1929
Studebaker, Pres. 8, FE 1929
Studebaker, Pres. 8, FH 1930
Studebaker, Pres. 8, FE 1930
Studebaker, Pres. 8, 80, 90....1931
Studebaker, Pres. 8, 91 1932
Studebaker, Pres. 8, 82.....1933
Studebaker, Spd. Pres. 8, 92..1933

T 183-174
Nash, Twin Ign., 8, 490.....1930
Nash, 8-90 1931
Nash, 990 1932
Nash, 1090, Adv. 8 1932
Pierce-Arrow, 836A 1934
Pierce-Arrow, 840H 1934
Studebaker, 6, 56 1933
Studebaker, Comm. 8, 73.....1933

T 184-174
Auburn, 12-160 1932
Auburn, 12-161 1933
Auburn, 12-165 1933
Franklin, 12, 17 1932
Franklin, 12, 17B 1933
Franklin, 12, 17 1934

T 185-174
Hupmobile, 8, 226 1932

T 193-37
Nash, Spc. 8, 1170 1933
Nash, Adv. 8, 1180 1933
Nash, Amb. 8, 1290 1934

T 200-201
Ford, T 1927
Ford, A 1928
Ford, A 1929
Ford, A 1930
Ford, A 1931
Ford, A 1932

T 202-203
Ford, B 1932

T 235-236
Willys, 77 1933
Willys, 77 1934

T 247-248
Durant, 617 1930
Willys-Knight, 70B 1929
Willys-Knight, 87 1930
Willys-Knight, 70B 1930
Willys, 6, 98B 1930
Willys, Six, 97 1931
Willys, Six, 98D 1931
Willys, 8-80 1931
Willys-Knight, 95 1932
Willys-Overland, 6-90 1932
Willys-Knight, 56 1928
Whippet, 6, 98A 1929
Durant, 6-12 1931
Durant, 6-14 1931

T 247-250
Graham-Paige, 610 1928

T 251-249
Erskine, American, 6, 51.....1928
Erskine, 6, 52 1929
Essex, Challenger, 6 1930
Essex, Challenger, 6 1931
Essex, Terraplane, 6 1933
Essex, Terraplane, 8 1933
Hudson, Great 8 1930
Hudson, 8 1931

T 252-249
Dodge Bros., 4, 124 1927
Dodge Bros., Senior 6 1928
Dodge Bros., 4, 128 1928
Dodge Bros., Victory 6 1928
Nash, Std. 6, 320 1928
Nash, Std. 6, 420 1929

T 272-273
Jordan, 6, E 1929
Stutz, LAA6 1933

T 274-275
Jordan, 8, G 1929
Studebaker, Special 6 1927

T 277-278
Studebaker, Big 6, ES 1927
Studebaker, Comm. 6, EW...1927

T 279-278
Kissel, 6, 73 1929
Kissel, 8, 95 1929
Kissel, 8, 126 1929
Kissel, 8, 126 1930
Pierce-Arrow, 6, 81 1928
Stutz, SV16 1933
Stutz, DV32 1933
Stutz, 8, SV16 1934
Stutz, 8, DV32 1934

T 280-281
Lincoln, V8 1929
Lincoln, V8 1930
Lincoln, V8 1931

T 286-287
Ford, V8 1932
Ford, V8-40 1933
Ford, V8, 40-34 1934

T 310
Lincoln, V8 1932
Lincoln, V12 1932
Lincoln, V12-136 1933
Lincoln, V12-145 1933

T 312-313
Auburn, Std. 8, 50X 1934

Interchangeable Bevel Pinion Shaft Rear Bearings

DIRECTIONS—All Bevel Pinion Shaft Rear Bearings listed under one number, such as B61, are interchangeable. The letter T indicates a taper roller bearing and B indicates a ball or roller bearing. The first number after the T is for the cup and the second is for the cone. Also read directions at top of page 74.

B 37	Kissel, 8, 126	1929
B 38	Lincoln, V8	1932
	Lincoln, V12	1932
	Lincoln, V12-145	1933
B 50	Cadillac, V8, 355A	1931
	Cadillac, V12, 370A	1931
	LaSalle, V8, 340	1930
	LaSalle, V8, 345A	1931
B 51	Buick, 34-40	1934
	Chevrolet, Mast. 6, CA	1933
	Chevrolet, Mast. 6, DA	1934
	Pontiac, 8, 601	1933
	Pontiac, 8, 603	1934
B 52	Chevrolet, Std. 6, CC	1933
	Chevrolet, Std. 6, DC	1934
B 57	Cord, 8, L-29	1930
	Cord, 8, L-30	1931
	Cord, 8, L-30	1932
B 61	Elcar, 75	1929
	Franklin Olympic, 18B	1933
	Franklin Olympic, 6, 18	1934
	Marmon, 8, 68	1929
	Marmon, 8-69	1930
	Peerless, Std. 8, A	1930
	Peerless, Std. 8, A	1931
	Reo, 6, S2	1933
	Reo, 6, S4	1934
B 62	Elcar, 95	1929
	Elcar, 96	1929
	Graham-Paige, 614	1928
	Graham-Paige, 615	1929
	Graham, Spec. 6	1930
	Graham, Std. 8	1930
	Graham, Spec. 8	1930
	Graham, Spec. 8	1931
	Graham, Cust. 8	1931
	Marmon, 8-79	1930
	Marmon, 8-125, HH	1932
	Peerless, Master 8, B	1930
	Peerless, Master 8, B	1931
	Peerless, Master 8, B	1932
	Reo Wolverine, 6, B	1928
	Reo Flying Cloud, 6, A	1928
	Reo Mate, 6, B2	1929
	Reo, Master 6, C	1929
	Reo, 6, 15	1930
	Reo, 6, 20	1930
	Reo, 6, 25	1930
	Reo, 6, 15	1931
	Reo, 6, 20	1931
	Reo, 6, 25	1931
	Reo, 8, 30, 31	1931
	Reo, 8, 35	1931
	Reo, 6-21, 25	1932
	Reo, 8-21	1932
	Reo, 8-25	1932
	Reo, S	1932
	Reo, 8, 31	1932
	Reo, 8, 35, 52	1932
	Reo, Royale, N1, 2	1933
	Reo, Royale, 8, N1, 2	1934
B 63	Elcar, 120	1929
	Graham-Paige, 619	1928
	Graham-Paige, 629	1928
	Graham-Paige, 835	1928
	Graham-Paige, 621	1929
	Graham-Paige, 827	1929
	Graham-Paige, 837	1929
	Graham, Cust. 8, 127	1930
	Graham, Cust. 8, 137	1930
	Lincoln, V12-136	1933
	Lincoln, V12	1934
	Locomobile, 86	1929
	Locomobile, 88	1929
	Marmon, Big 8-89	1930
	Marmon, 88, CC	1931
	Peerless, Custom 8, C	1930
	Peerless, Custom 8, C	1931
	Peerless, Cust. 8, C	1932
B 64	Chevrolet, 4, AA	1927
	Chevrolet, 4, AB	1928
	Chevrolet, 6, AC	1929
	Chevrolet, 6, AD	1930
	Chevrolet, 6, AE	1931
	Chevrolet, 6, BA	1932
	LaSalle, 8, 350	1934
	Marquette, 6, 30	1930
	Oakland, 6, 212	1928
	Oakland, AA6	1929
	Oakland, 8, 101	1930
	Oakland, 8, 301	1931
	Oldsmobile, 6, F30	1930
	Oldsmobile, 6, F31	1931
	Oldsmobile, 6, F32	1932
	Oldsmobile, 8, L32	1932
	Oldsmobile, 6, F33	1933
	Oldsmobile, 8, L33	1933
	Oldsmobile, 8, L34	1934
	Pontiac, 6-27	1927
	Pontiac, 6-28	1928
	Pontiac, 6-29	1929
	Pontiac, 6-30	1930
	Pontiac, 6, 401	1931
	Pontiac, 6, 402	1932
	Pontiac, 8, 302	1932
	Whippet, 6	1927
	Whippet, 6, 98	1928
B 65	Blackhawk, L6	1929
	Blackhawk, L8	1929
	Blackhawk, L6	1930
	Blackhawk, L8	1930
	Buick, 8-50	1931
	Buick, 32-50	1932
	Buick, 33-50	1933
	Buick, 34-50	1934
	Marmon, 8, 78	1929
	Oldsmobile, 6, F28	1928
	Oldsmobile, 6, F29	1929
	Stutz, 8, MA	1931
	Stutz, 8, MB	1931
	Stutz, LAA6	1933
	Stutz, SV16	1933
	Stutz, DV32	1933
	Stutz, 8, SV16	1934
	Stutz, T, DV32	1934
B 66	Buick, 115	1928
	Buick, 116	1929
	Buick, 40	1930
	Buick, 8-60	1931
	Buick, 32-60	1932
	Buick, 33-60	1933
	Buick, 34-60	1934
	Viking, V29, V30	1930
B 67	Buick, 120	1928
	Buick, 128	1928
	Buick, 121	1929
	Buick, 129	1929
	Buick, 50	1930
	Buick, 60	1930
	Buick, 8-80	1931
	Buick, 8-90	1931
	Buick, 32-80	1932
	Buick, 32-90	1932
	Buick, 33-80	1933
	Buick, 33-90	1933
	Buick, 34-90	1934
	Cadillac, V8, 355B	1932
	Cadillac, V12, 370B	1932
	Cadillac, V16, 452B	1932
	Cadillac, V8, 355C	1933
	Cadillac, V12, 370C	1933
	Cadillac, V16, 452C	1933
	Cadillac, V8, 355D	1934
	Cadillac, V12, 370D	1934
	Cadillac, V16, 452D	1934
	Chrysler, 80L	1928
	Chrysler, Imp. 6	1929
	Chrysler, Imp. 6	1930
	LaSalle, V8, 345B	1932
	LaSalle, V8, 345C	1933
B 68	Duesenberg, J	1929
	Duesenberg, J	1930
	Duesenberg, J	1931
	Duesenberg, J	1932
	Duesenberg, J	1933
	Duesenberg, J	1934
B 70	Stearns-Knight, M, 6-80	1929
	Stearns-Knight, N, 6-80	1929
	Willys-Knight, 66A	1928
B 71	LaSalle, V8, 303	1928
	LaSalle, V8, 328	1929
B 72	Cadillac, V8, 341A	1928
	Cadillac, V8, 341B	1929
	Cadillac, V8, 353	1930
	Cadillac, V16, 452	1930
	Cadillac, V16, 452A	1931
	Pierce-Arrow, 6, 36	1928
B 81	Kissel, 6-70	1928
B 96	Chrysler, 8, Std., CD	1930
	Chrysler, 8, CD	1931
	Chrysler, 8, CP	1932
	Dodge, 8, DK	1932
B 97	Chrysler, Royal 8, CT	1933
	Dodge 8, DO	1933
B 126	Oldsmobile, 6, F34	1934
B 131	Dodge Bros., Victory 6	1928
	Dodge Bros., Standard 6	1928
	Dodge Bros., 6, DA	1929
	Dodge Bros., Senior 6	1929
	Dodge Bros., 6, DB	1930
	Dodge Bros., Senior 6	1930
B 132	Austin, A	1931
B 133	Austin, A	1932
B 134	Austin	1933
	Austin	1934
B 137	Packard, Light 8, 900	1932
	Packard, 8, 1001	1933
	Packard, 8, 1002	1933
B 138	Packard, 6, 526	1928
	Packard, 6, 533	1928
	Packard, 8, 443	1928
	Packard, 8, 626	1929
	Packard, 8, 633	1929
	Packard, 8, 640	1929
	Packard, 8, 645	1929
	Packard, 8, 726	1930
	Packard, 8, 733	1930
	Packard, 8, 740	1930
	Packard, 8, 745	1930
	Packard, 8, 826	1931
	Packard, 8, 833	1931
	Packard, 8, 840	1931
	Packard, 8, 845	1931
	Packard, Twin 6, 905, 6	1932
	Packard, Super 8, 1003, 4	1933
	Packard, 12, 1005, 6	1933
B 139	Packard, 8, 901	1932
	Packard, 8, 902	1932
	Packard, 8, 903	1932
	Packard, 8, 904	1932
B 142	Packard, 8, 1100, 1, 2	1934
B 143	Packard, Super 8, 1103, 4, 5	1934
	Packard, 12, 1107, 8	1934
B 160	Nash, Spec. 6, 330	1928
	Nash, Adv. 6, 360	1928
	Nash, Spec. 6, 430	1929
	Nash, Adv. 6, 460	1929
	Nash, Twin Ign., 6, 480	1930
T 8-9	Durant, Four, 4	1929
	Star, 4, M	1928
T 10-12	Auburn, 88	1928
	Auburn, 6-85	1930
	Auburn, 8-95	1930
	Gardner, 125	1929
	Gardner, 136	1930
	Gardner, 140	1930
	Gardner, 136	1931
	Gardner, 148	1931
T 10-25	Kissel, 6, 73	1930
T 15-12	Auburn, 120	1929
	Auburn, 115	1928
	Auburn, 125	1930
	Auburn, 8-98	1931
	Gardner, 130	1929
	Gardner, 150	1930
	Gardner, 158	1931
	Jordan, 8, G	1929
	Jordan, 8, 90, G	1931
	Kissel, 8, 95	1930
	Peerless, 6-81	1929
	Peerless, 8, 125	1929
T 20-12	Windsor, 8-82	1929
	Windsor, 8-92	1929
T 38-12	Moon, 6-72	1929
	Windsor, 6-69	1929
	Windsor, 6-72	1929
	Windsor, 6-77	1929
T 66-61	Hudson, Super 6	1928
	Hudson, Super 6	1929
T 67-64	Chandler, Big 6	1929
	Chandler, 85	1929
T 68-64	Chandler, 65	1929
	Chandler, 75	1929
T 76-70	Marmon, 16	1931
	Marmon, 16	1932
	Pierce-Arrow, 836A	1934
	Pierce-Arrow, 840A	1934

T 76-73	Marmon, 16	1933
	Pierce-Arrow, 125	1929
	Pierce-Arrow, 126	1929
	Pierce-Arrow, 132, C	1930
	Pierce-Arrow, 134, B	1930
	Pierce-Arrow, 139, B	1930
	Pierce-Arrow, 144, A	1930
	Pierce-Arrow, 43	1931
	Pierce-Arrow, 42	1931
	Pierce-Arrow, 41	1931
	Pierce-Arrow, 54	1932
	Pierce-Arrow, 53	1932
	Pierce-Arrow, 52	1932
	Pierce-Arrow, 51	1932
	Pierce-Arrow, 1242	1933
	Pierce-Arrow, 1247	1933
	Pierce-Arrow, 1240A	1934
	Pierce-Arrow, 1248A	1934
T 28-79	Lincoln, V8	1928
T 106-107	Whippet, 4, 96	1927
	Whippet, 4, 96	1928
	Whippet, 4, 96A	1929
	Whippet, 4, 96A	1930
T 109-105	Jordan, 8, 80, T	1930
	Jordan, 8, 90, G	1930
T 127-126	Auburn, 76	1928
	Peerless, 6-61	1929
	Peerless, 6-61A	1929
T 131-126	Auburn, 6-80	1929
	Auburn, 8-90	1929
T 131-128	Gardner, 120	1929
	Jordan, 8, 80, T	1931
T 132-126	Chrysler, 52	1928
T 138-139	Continental Beacon, C-400	1933
T 141-142	DeVaux, 6-75	1932
	Durant, 614	1930
	Durant, 6-10	1931
	Durant, 619	1931
	Erskine, 6, 53	1930
	Studebaker, 6, 53	1930
	Studebaker, Dict., 6, GL	1930
	Studebaker, 6, 54	1931
	Studebaker, Dict., 8-61	1931
T 141-143	Rockne, 6-75	1932
	Studebaker, 6, 55	1932
T 146-142	Essex, Super 6	1928
	Essex, Challenger, 6	1929
	Graham-Paige, 612	1929
	Graham, Std. 6, 68	1934
	Graham, De Luxe 6, 68	1934
	Hupmobile, 6, 417W	1934
	LaFayette, 6, 110	1934
	Plymouth, 4, U, U30	1930
	Studebaker, Dict. 6, A	1934
T 147-142	Chrysler, 66	1930
	Chrysler, 66	1931
	Chrysler, 6, CI	1932
	Continental Flyer, C-600	1933
	Continental Ace, 41A	1933
	Continental, 4-41	1934
	DeSoto, 6, K	1929
	DeSoto, 6, CK	1930
	DeSoto, 8, CF	1930
	DeSoto, 6, SA	1931
	DeSoto, 8, CF	1931
	DeSoto, 6, SC	1932
	Dodge Bros., 6, DD	1930
	Dodge Bros., 6, DH	1931
	Dodge Bros., 8, DC	1930
	Dodge Bros., 8, DG	1931
	Dodge, 6, DL	1933
	Essex, Challenger, 6	1930
	Essex, Challenger, 6	1931
	Essex, Greater 6	1932
	Graham, Prosperity 6	1931
T 147-43	Chrysler, 6, CJ	1931
	Chrysler, 6, CM	1931
	Graham, Std. 6	1930
	Graham, 6, 56, 58	1932
	Hudson, Great 8	1930
	Hudson, 8	1931
	Hudson, 8	1932
	Hupmobile, 6, S, Century	1930
	Hupmobile, Century 6, S	1931
	Hupmobile, 6, 214	1932
	Marmon, 8, Roosevelt	1930
	Marmon, 70	1931
	Nash, Single 6, 450	1930
	Nash, 6-60	1931
	Nash, 8-70	1931
	Nash, 8-80	1931
	Nash, 1080, Spc. 8	1932
	Nash, 960	1932
	Nash, 970	1932
	Nash, 980	1932
	Plymouth, 4, Q	1929
	Plymouth, 4, PA	1931
	Plymouth, 4, PB	1932
	Rockne, 6-65	1932
	Rockne, 6, 10	1933
	Roosevelt	1929
	Roosevelt	1930
T 148-142	Durant, 55	1928
	Durant, 65	1928
	Durant, Six, 60	1929
	Durant, Six, 66	1929
	Durant, 63	1930
T 149-142	Erskine American, 6, 51	1928
	Erskine, 6, 52	1929
T 151-142	Durant, 617	1930
	Durant, 6-12	1931
	Durant, 6-14	1931
	Graham-Paige, 610	1928
	Willys-Knight, 56	1928
	Willys-Knight, 70B	1929
	Willys-Knight, 87	1930
	Willys-Knight, 70B	1930
	Willys, 6, 98B	1930
	Willys, Six, 97	1931
	Willys, Six, 98D	1931
	Willys, 8-80	1931
	Willys, 8-80D	1931
	Whippet, 6, 98A	1929
T 151-143	Willys-Knight, 95	1932
	Willys-Overland, 6-90	1932
	Willys-Overland, 8-88	1932
T 156-142	Essex Terraplane, 6	1933
	Essex Terraplane, 8	1933
	Hudson, 8	1934
	Terraplane, 6	1934
T 156-143	Hudson, Super 6	1933
	Hudson, 8	1933
T 175-174	Nash, Spec. 8, 1170	1933
	Nash, Adv. 8, 1180	1933
	Nash, Amb. 8, 1190	1933
	Nash, Amb. 8, 1290	1934
T 176-174	Chrysler, 62	1928
	Chrysler, 72	1928
	Chrysler, 65	1929
	Chrysler, 75	1929
	Chrysler, 70	1930
	Chrysler, 77	1930
	Chrysler, 70	1931
	Chrysler, Imp. 8, CG	1931
	Chrysler, Imp. 8, CH	1932
	Chrysler, Imp. Cust. 8, CL	1932
	Chrysler, Imp. 8, CQ	1933
	Chrysler, Imp. Cust. 8, CL	1933
T 177-174	Durant, 75	1928
	Durant, Six, 70	1929
	Franklin Airman, 12A & B	1928
	Franklin, 130	1929
	Franklin, 135	1929
	Franklin, 137	1929
	Franklin, 145	1930
	Franklin, 147	1930
	Franklin, 15	1931
	Franklin Olympic, 18	1932
	Franklin, 16	1932
	Franklin Airman, 16B	1933
	Franklin Airman, 6, 16	1934
	Graham, Std. 6	1931
	Graham, Spec. 6	1931
	Hupmobile, 6, A, Century	1928
	Hupmobile, 6, A, Century	1929
	Hupmobile, Century 8, L	1931
	Hupmobile, 6, 216	1932
	Hupmobile, 8, 218	1932
	Studebaker, Dictator, 6, GE	1929
	Studebaker, Com'der, 6, GJ	1929
	Studebaker, Com'der, 8, FD	1929
	Studebaker, Com., 6, GJ	1930
	Willys-Knight, 70A	1928
T 179-174	Auburn, 8-101	1933
	Auburn, 8-105	1933
T 179-180	Auburn, 8-100	1932
	Auburn, Std. 8, 50X	1934
T 183-174	Graham, 8, 7	1932
	Hupmobile, 8, 222	1932
	Hupmobile, 322	1933
	Hupmobile, 326	1933
	Hupmobile, 8, 422F	1934
	Hupmobile, 8, 426I	1934
	Nash, 1060, Big 6	1932
	Nash, 1070, Std 8	1932
	Nash, Big 6, 1120	1933
	Nash, Std. 8, 1130	1933
	Nash, Big 6, 1220	1934
	Nash, Adv. 8, 1280	1934
T 189-30	Willys-Knight, 66B	1929
	Willys-Knight, 66B	1930
	Willys-Knight, 66D	1931
	Willys-Knight, 66D	1932
T 190-30	Graham, Std. 8, 64	1933
	Graham, Cust. 8, 64	1933
	Hupmobile, 8, M, Century	1928
	Hupmobile, 8, M, Century	1929
	Hupmobile, 8, C	1930
	Hupmobile, 8, C	1931
	Hupmobile, 8, 221	1932
	Hupmobile, 321	1933
	Hupmobile, 6, 421K	1934
	Hupmobile, 6, 421A	1934
	Nash, Twin Ign., 8, 490	1930
	Nash, 8-90	1931
	Nash, 1090, Adv. 8	1932
	Nash, 990	1932
	Studebaker, Dict., 6, EU	1927
	Studebaker, Standard, 6, EU	1927
	Studebaker, Pres. 6, ES	1928
	Studebaker, Comm. 6, GH	1928
	Studebaker, Dictator, 6, GE	1928
	Studebaker, Com'der, 6, GB	1928
	Studebaker, President, 8, FA	1928
T 192-30	Studebaker, Dict., 8, FC	1930
	Studebaker, Com., 8, FD	1930
	Studebaker, Com., 8-70	1931
	Studebaker, Dict., 8, 62	1932
	Studebaker, Com., 8, 71	1932
T 194-195	Studebaker, Pres., 8, FH	1929
	Studebaker, Pres., 8, FE	1929
	Studebaker, Pres., 8, FH	1930
	Studebaker, Pres., 8, FE	1930
	Studebaker, Pres., 8, 80, 90	1931
	Studebaker, Pres., 8, 91	1932
	Studebaker, Pres., 8, 82	1933
	Studebaker, Spd. Pres., 8, 92	1933
T 196-37	Auburn, 12-160	1932
	Auburn, 12-161	1933
	Auburn, 12-165	1933
	Franklin, 12, 17	1932
	Franklin, 12, 17B	1933
	Franklin, 12, 17	1934
T 197-37	Hupmobile, 8, H	1930
	Hupmobile, 8, H	1931
	Hupmobile, 8, U	1931
	Hupmobile, 8, 225	1932
	Hupmobile, 8, 237	1932
T 200-201	Ford, T	1927
	Ford, A	1928
	Ford, A	1929
	Ford, A	1930
	Ford, A	1931
	Ford, A	1932
T 202-203	Ford, B	1932
T 206-207	Ford, V8	1932
	Ford, V8-40	1933
T 235-236	Willys, 77	1933
	Willys, 77	1934
T 255-256	Dodge Bros., 4, 128	1928
	Nash, Std. 6, 320	1928
	Nash, Std. 6, 420	1929
T 270-271	Auburn, Std. 6, 52X	1934
	Chrysler, 6, CO	1933
	Chrysler, 6, CA	1934
	DeSoto, 6, SD	1933
	DeSoto, 6, SE	1934
	Dodge, 6, DP	1933
	Dodge, 6, DR, DS	1934
	Graham, Std. 6, 60	1933
	Graham, Spec. 8, 67	1934
	Graham, Super Spec. 8, 69S	1934
	Graham, Std. 8, 67	1934
	Plymouth, 6, PC	1932
	Plymouth, Std. 6, PC	1933
	Plymouth, DL, 6, PD	1933
	Plymouth, 6, PF, PG	1934
	Plymouth, De Luxe 6, PE	1934
	Studebaker, Comm. 8, B	1934
T 272-273	Jordan, 6, E	1929
	Stutz, 6, LA	1931
	Stutz, 6, LAA	1932
T 274-275	Dodge Bros., 4, 124	1927
	Dodge Bros., Senior 6	1928
T 276-275	Pierce-Arrow, 836	1933
	Pierce-Arrow, 1236	1933
	Studebaker, Special 6	1927
T 277-278	Kissel, 8, 126	1930
T 279-278	Kissel, 6, 73	1929
	Kissel, 8, 95	1929
	Pierce-Arrow, 6, 81	1928
	Stearns-Knight, H, 8-90	1929
	Stearns-Knight, J, 8-90	1929
	Stearns-Knight, H, 8-90	1930
	Stearns-Knight, J, 8-90	1930
	Studebaker, Big 6, ES	1927
	Studebaker, Comm. 6, EW	1927
	Stutz, 8, BB	1928
	Stutz, 8, M	1929
	Stutz, 8, MA	1930
	Stutz, 8, MB	1930
	Stutz, 8, SV16	1932
	Stutz, 8, DV32	1932
T 280-281	Lincoln, V8	1929
	Lincoln, V8	1930
	Lincoln, V8	1931
T 290-37	Hupmobile, 8, 226	1932
T 295-30	Studebaker, 6, 56	1933
	Studebaker, Comm. 8, 73	1933
T314-315	Auburn, Cust. 6, 52Y	1934
	Auburn, Cust. 8, 50Y	1934
	Chrysler, 8, CU	1934
	Chrysler, Imp. 8, CV	1934
	Chrysler, Imp. Cust. 8, CX	1934
T 319-315	Graham, Super Cust. 8, 69	1934
	Hupmobile, 6, 421J	1934
	Hupmobile, 8, 427T	1934
	Studebaker, Pres. 8, C	1934

Interchangeable Differential Bearings

DIRECTIONS—All Differential Bearings listed under one number, such as B42, are interchangeable. The letter T indicates a taper roller bearing and B indicates a ball or roller bearing. The first number after the T is for the cup and the second is for the cone. Also read directions at top of page 74.

B 42

Buick, 8-50 1931
Buick, 32-50 1932
Buick, 33-50 1933
Buick, 34-40 1934
Buick, 34-50 1934
Chevrolet, 6, AD 1930
Chevrolet, 6, AE 1931
Chevrolet, 6, BA 1932
Chevrolet, Mast. 6, CA 1933
Chevrolet, Mast. 6, DA 1934
LaSalle, 8, 350 1934
Oldsmobile, 6, F32 1932
Oldsmobile, 8, L32 1932
Oldsmobile, 6, F33 1933
Oldsmobile, 8, L33 1933
Oldsmobile, 6, F34 1934
Oldsmobile, 8, L34 1934
Pontiac, 8, 601 1933
Pontiac, 8, 603 1934

B 43

Buick, 8-80 1931
Buick, 8-90 1931
Buick, 32-80 1932
Buick, 32-90 1932
Buick, 33-80 1933
Buick, 33-90 1933
Buick, 34-60 1934
Buick, 34-90 1934

B 44

Chevrolet, Std. 6, CC 1933
Chevrolet, Std. 6, DC 1934

B 46

Chevrolet, 4, AA 1927
Chevrolet, 4, AB 1928
Chevrolet, 6, AC 1929
Marquette, 6, 30 1930
Oakland, 6, 212 1928
Oakland, AA6 1929
Oakland, 8, 101 1930
Oakland, 8, 301 1931
Oldsmobile, 6, F28 1928
Oldsmobile, 6, F29 1929
Oldsmobile, 6, F30 1930
Oldsmobile, 6, F31 1931
Pontiac, 6-27 1927
Pontiac, 6-28 1928
Pontiac, 6-29 1929
Pontiac, 6-30 1930
Pontiac, 6, 401 1931
Pontiac, 6, 402 1932
Pontiac, 8, 302 1932

B 47

Buick, 115 1928
Buick, 116 1929
Buick, 40 1930
Buick, 8-60 1931
Buick, 32-60 1932
Buick, 33-60 1933
Viking, V29, V30 1930

B 48

Buick, 128 1927
Buick, 120 1928
Buick, 121 1929
Buick, 129 1929
Buick, 50 1930
Buick, 60 1930

B 59

Duesenberg, J 1929
Duesenberg, J 1930
Duesenberg, J 1931
Duesenberg, J 1932
Duesenberg, J 1933
Duesenberg, J 1934

B 67

Chrysler, Imp. 6 1929
Chrysler, Imp. 6 1930

B 87

Durant, 55 1928
Durant, 65 1928
Durant, Four, 4 1929
Durant, Six, 60 1929
Durant, Six, 66 1929
Durant, 63 1930
Star, 4, M 1928

T 13-12

Essex, Super 6 1928
Essex, Challenger 6 1929

T 13-14

Auburn, 6-80 1929
Auburn, 8-90 1929
Essex, Challenger, 6 1930
Essex, Challenger, 6 1931
Hudson, Great 8 1930
Hudson, 8 1931
Jordan, 8, 80, T 1931

T 17-14

Auburn, 8-98 1931
Auburn, 8-100 1932
Chrysler, 6, CJ 1931
Chrysler, 6, CM 1931
DeSoto, 6, SA 1931
DeSoto, 6, SC 1932
Erskine, 6, 53 1930
Essex, Greater 6 1932
Franklin Olympic, 18B 1933
Franklin Olympic, 6, 18 1934
Hudson, 8 1932
Hudson, Super 6 1933
Hudson, 8 1933
Plymouth, 4, PA 1931
Plymouth, 4 PB 1932
Reo, S 1932
Reo, 6, S2 1933
Reo, 6, S-4 1934
Rockne, 6-75 1932
Studebaker, Dictator, 6, GE.. 1929
Studebaker, Com'der, 6, GJ.. 1929
Studebaker, Com'der, 8, FD.. 1929
Studebaker, 6, 53 1930
Studebaker, Dict., 6, GL..... 1930
Studebaker, Dict., 8, FC..... 1930
Studebaker, Com., 6, GJ..... 1930
Studebaker, Com., 8, FD..... 1930
Studebaker, 6, 54 1931
Studebaker, Dict., 8-61 1931
Studebaker, Com., 8-70 1931
Studebaker, 6, 55 1932
Studebaker, Dict., 8, 62 1932
Studebaker, Com., 8, 71 1932
Studebaker, 6, 56 1933
Studebaker, Comm., 8, 73 1933

T 17-15

Auburn, Std. 6, 52X 1934
Graham, Std. 6, 65 1933
Graham, Std. 6, 68 1934
Graham, De Luxe 6, 68 1934
Graham, Spec. 8, 67 1934
Graham, Super Spec. 8, 69S.. 1934
Graham, Std. 8, 67 1934
Hupmobile, 6, 417W 1934
LaFayette 6, 110 1934
Rockne, 6-65 1932
Rockne, 6, 10 1933
Studebaker, Dict. 6, A..... 1934
Studebaker, Comm. 8, B 1934

T 18-14

Continental Ace, 41A 1933
Continental, 4-41 1934
DeVaux, 6-75 1932
Durant, 614 1930
Durant, 6-10 1931
Durant, 619 1931
Erskine American, 6, 51..... 1928
Erskine, 6, 52 1929
Graham, 6, 56, 58 1932
Marmon, 8, 68 1929

T 18-19

Auburn, 76 1928
Elcar, 75 1929
Marmon, 8-69 1930
Moon, 6-72 1929
Peerless, 6-61 1929
Peerless, 6-61A 1929
Peerless, Std. 8, A 1930
Peerless, Std. 8, A 1931
Windsor, 6-69 1929
Windsor, 6-72 1929
Windsor, 6-77 1929
Whippet, 4, 96 1927
Whippet, 4, 96 1928
Whippet, 6, 98 1928
Whippet, 4, 96A 1929
Whippet, 4, 98A 1929
Whippet, 4, 96A 1930
Willys, 6, 98B 1930
Willys Six, 97 1931
Willys Six, 98D 1931
Willys, 8-80 1931
Willys-Knight, 95 1932
Willys-Overland, 6-90 1932

T 21-24

Auburn, 115 1928
Gardner, 150 1930
Gardner, 158 1931

T 21-25

Gardner, 130 1929
Windsor, 8-82 1929
Windsor, 8-92 1929

T 26-23

Chandler, 65 1929
Chandler, 75 1929
Elcar, 95 1929
Elcar, 96 1929
Graham-Paige, 614 1928
Graham-Paige, 615 1929
Graham, Spec. 6 1930
Marmon, 8-79 1930
Peerless, Master 8, B 1930
Peerless, Master 8, B 1931
Peerless, Master 8, B 1932
Reo Wolverine, 6B 1928
Reo, Mate, 6, B2 1929
Reo, 6, 15 1930
Reo, 6, 15 1931
Whippet, 6 1927
Willys-Knight, 56 1928
Willys-Knight, 70B 1929
Willys-Knight, 87 1930
Willys-Knight, 70B 1930
Willys, 8-80, D 1931
Willys-Overland, 8-88 1932

T 26-24

Auburn, 88 1928
Gardner, 120 1929
Gardner, 125 1929
Graham, Std. 6 1931
Graham, Spec. 6 1931
Graham, Spec. 8 1931
Graham, Cust. 8 1931
Graham, 8, 7 1932
Hupmobile, Cent. 8, L 1931
Hupmobile, 6, 216 1932
Hupmobile, 8, 218 1932
Hupmobile, 8, 222 1932
Hupmobile, 322 1933
Hupmobile, 326 1933
Hupmobile, 8, 422F 1934
Hupmobile, 8, 426I 1934
Marmon, 8-125, HH 1932
Nash, Single 6, 450 1930
Nash, 6-60 1931
Nash, 8-70 1931
Nash, 8-80 1931
Nash, 960 1932
Nash, 970 1932
Nash, 980 1932
Nash, 1060, Big 6 1932
Nash, 1070, Std. 8 1932
Nash, Big 6, 1120 1933
Nash, Std. 8, 1130 1933
Peerless, 6-81 1929
Cord, 8, L-30 1932

T 26-25

Auburn, 6-85 1930
Auburn, 8-95 1930
Gardner, 136 1930
Gardner, 140 1930
Gardner, 136 1931
Gardner, 148 1931
Kissel, 6, 73 1930
Kissel, 8, 95 1930

T 27-23

Cord, 8, L-29 1930
Cord, 8, L-30 1931
Cord, 8, L-30 1932
Dodge Bros., 4, 128 1928
Dodge Bros., Victory 6 1928
Dodge Bros., Standard 6 1928
Dodge Bros., Senior 6 1928
Dodge Bros., 6, DA 1929
Dodge Bros., Senior 6 1929
Jordan, 8, G 1929
Jordan, 8, 80, T 1930
Jordan, 8, 90, G 1930
Hupmobile, 8, M, Century... 1928
Hupmobile, 8, M, Century... 1929
Hupmobile, 8, C 1930
Hupmobile, 8, C 1931
Hupmobile, 8, 226 1932
Hupmobile, 8, 221 1932
Willys-Knight, 70A 1928

T 27-24

Auburn, 120 1929
Auburn, 125 1930
Chrysler, 66 1930
Chrysler, 8, Std., CD 1930
Chrysler, 8, CD 1931
Chrysler, 66 1931
Chrysler, 6, CI 1932
Chrysler, 8, CP 1932
Chrysler, Royal 8, CT 1933
DeSoto, 6, CK 1930
DeSoto, 8, CF 1930
DeSoto, 8, CF 1931
Dodge Bros., 6, DD 1930
Dodge Bros., 6, DB 1930
Dodge Bros., Senior 6..... 1930
Dodge Bros., 8, DC 1930
Dodge Bros., 6, DH 1931
Dodge Bros., 8, DG 1931
Dodge, 6, DL 1932
Dodge, 8, DK 1932

Dodge, 8, DO 1933
Jordan, 8, 90, G 1931
Nash, 1080, Spc. 8 1932
Nash, 1090, Adv. 8 1932
Nash, Spc. 8, 1170 1933
Nash, Adv. 8, 1180 1933
Nash, Big 6, 1220 1934
Nash, Adv. 8, 1280 1934
Peerless, 8, 125 1929
Willys-Knight, 66B 1930
Willys-Knight, 66D 1931
Willys-Knight, 66D 1932

T 27-30
Graham, Std. 8, 64 1933
Graham, Cust. 8, 64 1933
Graham, Super Cust. 8, 69...1934
Hupmobile, 321 1933
Hupmobile, 6, 421K 1934
Hupmobile, 6, 421A 1934
Hupmobile, 6, 421J 1934
Hupmobile, 8, 427T 1934
Studebaker, Pres. 8, C 1934

T 31-32
Packard, Light 8, 900 1932
Packard, 8, 901 1932
Packard, 8, 1001 1933
Packard, Super 8, 1003, 4.....1933
Packard, 8, 1002 1933

T 31-33
Chrysler, 8, CU 1934
Chrysler, Imp. 8, CV 1934
Chrysler, Imp. Cust. 8, CX..1934
Dodge Bros., 4, 124 1927
Elcar, 120 1929
Franklin, 12, 17 1932
Franklin, 12, 17B 1933
Franklin, 12, 17 1934
Kissel, 6, 73 1929
Kissel, 8, 95 1929
Kissel, 8, 126 1929
Kissel, 8, 126 1930
Locomobile, 86 1929
Locomobile, 88 1929
Marmon, 8, 78 1929
Marmon, Big 8-89 1930
Marmon, 88, CC 1931
Marmon, 16 1931
Marmon, 16 1932
Marmon, 16 1933
Packard, 8, 1100, 1, 2.....1934
Packard, Super 8, 1103, 4, 5..1934
Peerless, Custom 8, C 1930
Peerless, Custom 8, C 1931
Peerless, Custom 8, C 1932
Pierce-Arrow, 6, 81 1928
Pierce-Arrow, 125 1929
Pierce-Arrow, 126 1929
Pierce-Arrow, 132, C 1930
Pierce-Arrow, 134, B 1930
Pierce-Arrow, 139, B 1930
Pierce-Arrow, 144, A 1930
Reo Flying Cloud, 6, A 1928
Reo, Master 6, C 1929
Reo, 6, 20 1930
Reo, 6, 25 1930
Reo, 6, 20 1931
Reo, 6, 25 1931
Reo, 6-21, 25 1932
Stearns-Knight, M, 6-80 1929
Stearns-Knight, N, 6-80 1929
Studebaker, Standard 6, EU.1927
Studebaker, Special 6 1927
Studebaker, Big 6, ES 1927
Studebaker, Dict., 6, EU 1927
Studebaker, Comm., 6, EW...1927
Studebaker, Pres., 6, ES 1928
Studebaker, Comm., 6, GH...1928
Studebaker, Dictator, 6, GE..1928
Studebaker, Com'der, 6, GB..1928
Studebaker, Pres., 8, FA.....1928
Studebaker, Pres, 8, FH.....1929
Studebaker, Pres., 8, FE.....1929
Studebaker, Pres., 8, FH.....1930
Studebaker, Pres., 8, FE.....1930
Studebaker, Pres., 8, 80, 90...1931
Studebaker, Pres., 8, 91 1932
Studebaker, Pres., 8, 82 1933
Studebaker, Spd. Pres., 8, 92.1933
Willys-Knight, 66A 1928

T 34-33
Hupmobile, 8, H 1930
Hupmobile, 8, H 1931
Hupmobile, 8, U 1931
Hupmobile, 8, 237 1932
Hupmobile, 8, 225 1932
Reo, 8, 30, 31 1931
Reo, 8, 35 1931
Reo, 8, 31 1932
Reo, 8, 35, 52 1932
Reo, 8-21 1932
Reo, 8-25 1932
Reo, Royale, N1, 2 1933
Reo, Royale, 8, N1, 2 1934

T 35-32
Chrysler, 62 1928
Chrysler, 72 1928
Chrysler, 80L 1928
Chrysler, 65 1929
Chrysler, 75 1929
Chrysler, 70 1930
Chrysler, 77 1930
Chrysler, Imp. 8, CG 1931
Chrysler, 70 1931
Chrysler, Imp. 8, CH 1932
Chrysler. Imp. Cust. 8, CL...1932
Chrysler, Imp. 8, CQ 1933
Chrysler, Imp. Cust. 8, CL...1933

T 36-37
Chandler, Big 6 1929
Chandler, 85 1929

T 38-37
Franklin Airman, 12A & B...1928
Franklin, 130 1929
Franklin, 135 1929
Franklin, 137 1929
Franklin, 145 1930
Franklin, 147 1930
Franklin, 15 1931
Franklin Olympic, 18 1932
Franklin, 16 1932
Franklin Airman, 16B 1933
Franklin Airman, 6, 16.....1934
Graham-Paige, 619 1928
Graham-Paige, 629 1928
Graham-Paige, 835 1928
Graham-Paige, 621 1929
Graham-Paige, 827 1929
Graham-Paige, 837 1929
Graham, Std. 8 1930
Graham, Spec. 8 1930
Graham, Cust. 8, 127 1930
Graham, Cust. 8, 137 1930
Hudson, Super 6 1928
Hudson, Super 6 1929
Packard, 6, 526 1928
Packard, 6, 533 1928
Packard, 8, 626 1929
Packard, 8, 633 1929
Packard, 8, 726 1930
Packard, 8, 733 1930
Packard, 8, 826 1931
Packard, 8, 833 1931
Pierce-Arrow, 836A 1934
Pierce-Arrow, 840A 1934

T 38-321
Lincoln, V12 1934

T 40-41
Pierce-Arrow, 836 1933
Pierce-Arrow, 1236 1933

T 40-42
Jordan, 6, E 1929

T 43-41
Nash, Amb. 8, 1190 1933
Pierce-Arrow, 43 1931
Pierce-Arrow, 42 1931
Pierce-Arrow, 41 1931
Pierce-Arrow, 54 1932
Pierce-Arrow, 53 1932
Pierce-Arrow, 52 1932
Pierce-Arrow, 51 1932
Pierce-Arrow, 1242 1933
Pierce-Arrow, 1247 1933
Pierce-Arrow, 1240A 1934
Pierce-Arrow, 1248A 1934

T 43-42
Cadillac, V8, 355A 1931
Cadillac, V12, 370A 1931
Cadillac, V8, 355B 1932
Cadillac, V12, 370B 1932
Cadillac, V8, 355C 1933
Cadillac, V12, 370C 1933
Cadillac, V8, 355D 1934
Cadillac, V12, 370D 1934
LaSalle, V8, 303 1928
LaSalle, V8, 328 1929
LaSalle, V8, 340 1930
LaSalle, V8, 345A 1931
LaSalle, V8, 345B 1932
LaSalle, V8, 345C 1933

T 45-49
Stearns-Knight, H, 8-90.....1929
Stearns-Knight, J, 8-90.....1929
Stearns-Knight, H, 8-90.....1930
Stearns-Knight, J, 8-90.....1930
Stutz, 8, BB 1928
Stutz, 8, M 1929
Stutz, 8, MA 1930
Stutz, 8, MB 1930
Stutz, 8, SV16 1932
Stutz, 8, DV32 1932

T 46-48
Willys-Knight, 66B 1929

T 47-49
Blackhawk, L6 1929
Blackhawk, L8 1929
Blackhawk, L6 1930
Blackhawk, L8 1930
Stutz, 6, LA 1931
Stutz, 8, MA 1931
Stutz, 8, MB 1931
Stutz, 6, LAA 1932
Stutz, LAA6 1933

T 69-79
Lincoln, V8 1931
Lincoln, V8 1932
Lincoln, V12 1932
Lincoln, V12-136 1933
Lincoln, V12-145 1933

T 69-75
Packard, 8, 443 1928
Packard, 8, 640 1929
Packard, 8, 645 1929

T 74-73
Cadillac, V8, 341A 1928
Cadillac, V8, 341B 1929
Cadillac, V8, 353 1930
Cadillac, V16, 452 1930
Cadillac, V16, 452A 1931
Cadillac, V16, 452B 1932
Cadillac, V16, 452C 1933
Cadillac, V16, 452D 1934

T 77-75
Packard, 8, 740 1930
Packard, 8, 745 1930
Packard, 8, 840 1931
Packard, 8, 845 1931
Packard, 8, 902 1932
Packard, 8, 903 1932
Packard, 8, 904 1932
Packard, Twin 6, 905, 6 1932
Packard, 12, 1005, 6 1933
Packard, 12, 1105, 6 1934

T 190-30
Nash, Twin Ign., 8, 490 1930
Nash, 8-90 1931
Nash, 990 1932
Nash, Amb. 8, 1290 1934

T 198-199
Stutz, SV16 1933
Stutz, DV32 1933
Stutz, 8, SV16 1934
Stutz, 8, DV32 1934

T 200-204
Ford, A 1928
Ford, A 1929
Ford, A 1930
Ford, A 1931
Ford, A 1932

T 202-205
Ford, B 1932

T 232-223
Willys, 77 1933
Willys, 77 1934

T 232-226
Austin, A 1931
Austin, A 1932
Austin 1933
Austin 1934
Continental Beacon, C-400....1933

T 240-239
Continental Flyer, C-600 1933
Essex, Terraplane 6 1933
Essex, Terraplane 8 1933

T 261-262
Chrysler, 52 1928
DeSoto, 6, K 1929
Graham-Paige, 610 1928
Plymouth, 4, Q 1929
Plymouth, 4, U, U30 1930
Marmon, 8, Roosevelt 1930
Roosevelt 1929
Roosevelt 1930

T 263-262
Graham-Paige, 612 1929
Graham, Std. 6 1930
Graham, Prosperity 6 1931
Hupmobile, 6, S, Century....1930
Hupmobile, Cent. 6, S 1931
Hupmobile, 6, 214 1932
Marmon, 70 1931

T 264-265
Durant, 75 1928
Durant, Six, 70 1929
Durant, 617 1930
Durant, 6-12 1931
Durant, 6-14 1931
Hupmobile, 6, A, Century....1928
Hupmobile, 6, A, Century....1929
Nash, Std. 6, 320 1928
Nash, Std. 6, 420 1929

T 266-267
Nash, Spec. 6, 330 1928
Nash, Adv. 6, 360 1928
Nash, Spec. 6, 430 1929
Nash, Adv. 6, 460 1929
Nash, Twin Ign., 6, 480 1930

T 268-269
Chrysler, 6, CO 1933
Chrysler, 6, CA 1934
DeSoto, 6, SD 1933
DeSoto, 6, SE 1934
Dodge, 6, DP 1933
Dodge, 6, DR, DS 1934
Plymouth, 6, PC 1932
Plymouth, Std. 6, PC 1933
Plymouth, DL, 6, PD 1933
Plymouth, 6, PF, PG 1934
Plymouth, De Luxe 6, PE....1934

T 284-285
Ford, V8 1932
Ford, V8-40 1933
Ford, V8, 40-34 1934

T 320-260
Hudson, 8 1934
Terraplane, 6 1934

T 300
Ford, T 1927

T 301
Marmon Little, L 1927

T 302
Pierce-Arrow, 6, 36 1928

T 303
Auburn, Cust. 6, 52Y 1934
Auburn, Std. 8, 50X 1934
Auburn, Cust. 8, 50Y 1934
Auburn, 12-160 1932
Auburn, 12-161 1933
Auburn, 12-165 1933

T 305
Auburn, 8-101 1933
Auburn, 8-105 1933

T 311
Lincoln, V8 1928
Lincoln, V8 1929
Lincoln, V8 1930

Interchangeable Rear Wheel Bearings

DIRECTIONS—All Rear Wheel Bearings listed under one number, such as B64, are interchangeable. The letter T indicates a taper roller bearing and B indicates a ball or roller bearing. The first number after the T is for the cup and the other is for the cone. Also read directions at top of page **74**.

B 55
Oldsmobile, 6, F32 1932
Oldsmobile, 8, L32 1932

B 64
Chevrolet, 4, AA 1927
Chevrolet, 4, AB 1928
Chevrolet, 6, AC 1929
Chevrolet, 6, AD 1930
Chevrolet, 6, AE 1931
Chevrolet, 6, BA 1932
Marmon, 8, 68 1929
Marmon, 8-69 1930
Oldsmobile, 6, F28 1928
Oldsmobile, 6, F29 1929
Oldsmobile, 6, F30 1930
Oldsmobile, 6, F31 1931
Peerless, Std. 8, A 1930
Peerless, Std. 8, A 1931
Pontiac, 6-27 1927
Pontiac, 6-28 1928

B 65
Whippet, 6 1927
Whippet, 6, 98 1928
Willys-Knight, 70A 1928

B 66
Packard, 6, 526 1928
Packard, 6, 533 1928
Packard, 8, 626 1929
Packard, 8, 633 1929

B 67
Buick, 120 1928
Buick, 128 1928
Chandler, 65 1929
Chandler, Big 6 1929
Chandler, 75 1929
Chandler, 85 1929
Chrysler, 80L 1928
Packard, 8, 443 1928
Packard, 8, 640 1929
Packard, 8, 645 1929
Packard, 8, 740 1930
Packard, 8, 745 1930
Packard, 8, 840 1931
Packard, 8, 845 1931
Packard, 8, 903 1932
Packard, 8, 904 1932
Packard, Twin 6, 905, 6 1932
Packard, Super 8, 1003, 4 1933
Packard, 12, 1005, 6 1933
Packard, 8, 1002 1933
Stearns-Knight, M, 6-80 1929
Stearns-Knight, N, 6-80 1929
Willys-Knight, 66A 1928

B 68
Duesenberg, J 1929
Duesenberg, J 1930
Duesenberg, J 1931
Duesenberg, J 1932
Duesenberg, J 1933
Duesenberg, J 1934
LaSalle, V8, 303 1928
LaSalle, V8, 328 1929

B 74
Stutz, 8, M 1929
Stutz, 8, MA 1930
Stutz, 8, MB 1930
Stutz, 8, MA 1931
Stutz, 8, MB 1931

B 84
Oldsmobile, 6, F33 1933
Oldsmobile, 8, L33 1933
LaSalle, 8, 350 1934
Oldsmobile, 8, L34 1934

B 92
Gardner, 130 1929

B 105
Cadillac, V8, 353 1930
Cadillac, V16, 452 1930
Cadillac, V8, 355A 1931
Cadillac, V12, 370A 1931
Cadillac, V16, 452A 1931
LaSalle, V8, 340 1930
LaSalle, V8, 345A 1931

B 106
Cadillac, V8, 355B 1932
Cadillac, V12, 370B 1932
Cadillac, V16, 452B 1932
Cadillac, V8, 355C 1933
Cadillac, V12, 370C 1933
Cadillac, V16, 452C 1933
Cadillac, V8, 355D 1934
Cadillac, V12, 370D 1934
Cadillac, V16, 452D 1934
LaSalle, V8, 345B 1932
LaSalle, V8, 345C 1933

B 156
Ford, A 1928
Ford, A 1929
Ford, A 1930
Ford, A 1931
Ford, A 1932
Ford, B 1932
Ford, V8 1932
Ford, V8-40 1933
Ford, V8, 40-34 1934

B 162
Nash, Spec. 6, 330 1928
Nash, Adv. 6, 360 1928
Nash, Spec. 6, 430 1929
Nash, Adv. 6, 460 1929
Nash, Twin Ign., 6, 480 1930

B 206
Stutz, 8, BB 1928

B 208
Buick, 115 1928

B 209
Buick, 116 1929
Buick, 40 1930
Buick, 8-60 1931
Buick, 32-60 1932
Buick, 33-60 1933
Buick, 34-60 1934
Viking, V29, V30 1930

B 210
Buick, 121 1929
Buick, 129 1929
Buick, 50 1930
Buick, 60 1930
Buick, 8-80 1931
Buick, 8-90 1931
Buick, 32-80 1932
Buick, 33-80 1933
Buick, 33-90 1933
Buick, 34-90 1934

B 211
Buick, 8-50 1931
Buick, 32-50 1932
Buick, 32-90 1932
Marquette, 6, 30 1930
Oakland, Greater 6, GO 1927
Oakland, 6, 212 1928
Oakland, AA6 1929
Oakland, 8, 101 1930
Oakland, 8, 301 1931
Pontiac, 6-29 1929
Pontiac, 6-30 1930
Pontiac, 6, 401 1931
Pontiac, 6, 402 1932
Pontiac, 8, 302 1932

B 217
Buick, 34-40 1934
Chevrolet, Mast. 6, CA 1933
Chevrolet, Mast. 6, DA 1934
Pontiac, 8, 601 1933
Pontiac, 8, 603 1934

B 218
Buick, 33-50 1933
Buick, 34-50 1934

B 219
Chevrolet, Std. 6, CC 1933
Chevrolet, Std. 6, DC 1934

B 226
Oldsmobile, 6, F34 1934

T 16-14
Chrysler, 70 1930
Chrysler, 77 1930
Chrysler, Imp. 8, CG 1931
Chrysler, 70 1931
Chrysler, Imp. 8, CH 1932
Chrysler, Imp. Cust. 8, CL...1932
Chrysler, Imp. 8, CQ 1933
Chrysler, Imp. Cust. 8, CL...1933
Hupmobile, 8, H 1930
Hupmobile, 8, H 1931
Hupmobile, 8, U 1931
Hupmobile, 8, 225 1932
Hupmobile, 8, 237 1932
Nash, Twin Ign., 8, 490 1930
Nash, 8-90 1931
Nash, 990 1932
Nash, Amb. 8, 1190 1933
Nash, Amb. 8, 1290 1934
Packard, 8, 726 1930
Packard, 8, 733 1930
Packard, 8, 826 1931
Packard, 8, 833 1931
Packard, 8, 1100, 1, 2 1934
Packard, Super 8, 1103, 4, 5..1934
Pierce-Arrow, 125 1929
Pierce-Arrow, 126 1929
Pierce-Arrow, 132, C 1930
Pierce-Arrow, 134, B 1930
Pierce-Arrow, 139, B 1930
Pierce-Arrow, 144, A 1930
Pierce-Arrow, 43 1931
Pierce-Arrow, 42 1931
Pierce-Arrow, 41 1931
Pierce-Arrow, 54 1932
Pierce-Arrow, 53 1932
Pierce-Arrow, 52 1932
Pierce-Arrow, 51 1932
Pierce-Arrow, 836 1933
Pierce-Arrow, 1236 1933
Pierce-Arrow, 1242 1933
Pierce-Arrow, 1247 1933
Pierce-Arrow, 836A 1934
Pierce-Arrow, 840A 1934
Pierce-Arrow, 1240A 1934
Pierce-Arrow, 1248A 1934
Reo, 8, 30, 31 1931
Reo, 8, 35 1931
Reo, 8-21 1932
Reo, 8-25 1932
Reo, 8, 31 1932
Reo, 8, 35, 52 1932
Reo, Royale, N1, 2 1933
Reo, Royale, 8, N1, 2 1934
Studebaker, Pres., 8, FH....1929
Studebaker, Pres., 8, FE....1929
Studebaker, Pres., 8, 80, 90...1931
Studebaker, Pres., 8, 91 1932
Studebaker, Pres., 8, 82 1933
Studebaker, Spd. Pres., 8, 92.1933

T 17-14
Studebaker, Pres., 8, FH.....1930
Studebaker, Pres., 8, FE.....1930

T 18-14
Graham-Paige, 615 1929
Graham, Spc. 6 1930
Graham, Cust. 8 1931

T 18-19
Blackhawk, L6 1930
Blackhawk, L8 1930
Elcar, 75 1929
Stutz, 6, LA 1931
Stutz, LAA6 1933

T 20-14
Franklin, 145 1930
Franklin, 147 1930
Franklin, 15 1931
Franklin Olympic, 18 1932
Franklin, 16 1932
Franklin Airman, 16B 1933
Franklin Airman, 6, 16.....1934

T 21-22
Marmon, 88, CC 1931
Marmon, 16 1931
Marmon, 16 1932
Marmon, 16 1933

T 21-23
Graham-Paige, 619 1928
Graham-Paige, 629 1928
Graham-Paige, 835 1928
Graham-Paige, 621 1929
Graham-Paige, 827 1929
Graham-Paige, 837 1929
Graham, Std. 8 1930
Graham, Spec. 8 1930
Graham, Cust. 8, 127 1930
Graham, Cust. 8, 137 1930
Kissel, 6, 73 1929
Kissel, 8, 95 1929
Kissel, 8, 126 1929
Kissel, 8, 126 1930
Pierce-Arrow, 6, 81 1928

T 27-29
Stearns-Knight, H, 8-90.....1929
Stearns-Knight, J, 8-90.....1929
Stearns-Knight, H, 8-90.....1930
Stearns-Knight, J, 8-90.....1930
Stutz, 8, SV16 1932
Stutz, 8, DV32 1932
Stutz, SV16 1933
Stutz, DV32 1933
Stutz, 8, SV16 1934
Stutz, 8, DV32 1934

T 35-32
Chrysler, Imp. 6 1929
Chrysler, Imp. 6 1930

T 36-37
Cadillac, V8, 341A 1928
Cadillac, V8, 341B 1929
Lincoln, V8 1928
Lincoln, V8 1929
Lincoln, V8 1930
Lincoln, V8 1931
Lincoln, V12-136 1933
Lincoln, V12-145 1933

T 38-37
Lincoln, V8 1932
Lincoln, V12 1932

T 38-321
Lincoln, V12 1934

T 52-51
Essex, Super 6 1928
Essex, Challenger, 6 1929
Franklin Airman, 12A & B...1928
Franklin, 130 1929
Franklin, 135 1929
Franklin, 137 1929

T 52-53
Reo Flying Cloud, 6, A 1928
Reo, Master 6, C 1929
Reo, 6, 20 1930
Reo, 6, 25 1930
Reo, 6, 20 1931
Reo, 6, 25 1931
Reo, 6-21, 25 1932

T 56-53
Studebaker, Com'der, 6, GB..1928
Studebaker, Pres., 8, FA.....1928
Studebaker, Pres., 6, ES 1928
Studebaker, Comm., 6, GH...1928

T 59-53	Dodge Bros., 4, 124	1927
	Dodge Bros., Senior 6	1928
	Dodge Bros., Senior 6	1929
T 60-61	Auburn, 12-160	1932
	Auburn, 12-161	1933
	Auburn, 12-165	1933
	Franklin, 12, 17	1932
	Franklin, 12, 17B	1933
	Franklin, 12, 17	1934
T 62-61	Elcar, 120	1929
	Locomobile, 86	1929
	Locomobile, 88	1929
	Marmon, Big 8-89	1930
	Peerless, Custom 8, C	1930
	Peerless, Custom 8, C	1931
	Peerless, Custom 8, C	1932
	Studebaker, Comm., 6, EW	1927
	Studebaker, Big 6, ES	1927
T 72-73	Hudson, Super 6	1928
	Hudson, Super 6	1929
T 80-81	Durant, 55	1928
	Durant, 65	1928
	Durant, Four, 4	1929
	Durant, Six, 60	1929
	Durant, Six, 66	1929
	Durant, 63	1930
	Star, 4, M	1928
T 96-94	Jordan, 8, 80, T	1930
T 97-94	Austin, A	1931
	Austin, A	1932
	Austin	1933
	Austin	1934
T 110-107	Continental Beacon, C-400	1933
	Continental Flyer, C-600	1933
	Willys, 77	1933
	Willys, 77	1934
T 111-107	Rockne, 6-65	1932
	Rockne, 6, 10	1933
	Studebaker, Dict. 6, A	1934
T 113-107	Essex, Terraplane, 6	1933
	Essex, Terraplane, 8	1933
	Essex, Terraplane, 6	1934
T 129-126	Graham-Paige, 612	1929
	Graham, Std. 6	1930
	Graham, Prosperity 6	1931
	Graham, 6, 56, 58	1932
	Marmon, 8, Roosevelt	1930
	Roosevelt	1929
	Roosevelt	1930
T 129-128	Erskine, 6, 53	1930
	Marmon, 70	1931
	Nash, Std. 6, 320	1928
	Nash, Std. 6, 420	1929
	Studebaker, 6, 53	1930
	Studebaker, Dict., 6, GL	1930
	Studebaker, Dict., FC	1930
	Studebaker, 6, 54	1931
	Studebaker, Dict., 8-61	1931
T 130-126	Graham-Paige, 610	1928
T 131-126	Studebaker, Comm., 8, B	1934
T 131-128	Auburn, 120	1929
	Auburn, 125	1930
	Gardner, 150	1930
	Jordan, 8, 90, G	1930
	Jordan, 8, 90, G	1931
	Kissel, 8, 95	1930
	Peerless, 8, 125	1929
T 133-126	Erskine American, 6, 51	1928
	Erskine, 6, 52	1929
	Whippet, 4, 96	1927
	Whippet, 4, 96	1928
	Whippet, 4, 96A	1929
	Whippet, 6, 98A	1929
	Whippet, 4, 96A	1930
	Willys, 6, 98B	1930
	Willys Six, 97	1931
	Willys, 6, 98B	1930
	Willys, 8-80	1931
	Willys-Knight, 95	1932
	Willys-Overland, 6-90	1932
T 134-128	Continental Ace, 41A	1933
	Continental, 4-41	1934
	Hupmobile, 6, S, Century	1930
	Hupmobile, Cent. 6 S	1931
	Hupmobile, 6, 214	1932
T 135-136	Chrysler, 62	1928
	Chrysler, 72	1928
T 137-126	Chrysler, 52	1928
T 137-128	Auburn, Std. 6, 52X	1934
	Rockne, 6-75	1932
	Studebaker, 6, 55	1932
	Studebaker, Dict., 8, 62	1932
	Studebaker, 6, 56	1933
T 152-142	Durant, 617	1930
	Durant, 6, 12	1931
	Durant, 6-14	1931
T 158-159	Hupmobile, 6, A, Century	1928
	Hupmobile, 8, M, Century	1928
	Hupmobile, 6, A, Century	1929
	Hupmobile, 8, M, Century	1929
T 161-162	Auburn, Std. 8, 50X	1934
	Auburn, Cust. 8, 50Y	1934
T 163-12	Nash, 1060, Big 6	1932
	Nash, 1070, Std. 8	1932
	Nash, Big 6, 1120	1933
	Nash, Std. 8, 1130	1933
	Nash, Big 6, 1220	1934
	Nash, Adv. 8, 1280	1934
	Studebaker, Special 6	1927
T 163-164	Essex, Challenger, 6	1930
	Essex, Challenger, 6	1931
	Essex, Greater 6	1932
	Hudson, Great 8	1930
	Hudson, 8	1931
	Hudson, 8	1932
	Hudson, Super 6	1933
	Hudson, 8	1933
T 166-12	Peerless, 6-61	1929
	Peerless, 6-61A	1929
T 167-12	Hupmobile, 6, 216	1932
	Studebaker, Pres., 8, C	1934
	Willys-Knight, 66D	1931
	Willys, 8-80D	1931
	Willys-Knight, 66D	1932
	Windsor, 8-82	1929
	Windsor, 8-92	1929
	Willys-Overland, 8-88	1932
T 169-159	Hupmobile, 8, C	1930
	Hupmobile, 8, C	1931
	Hupmobile, 8, 226	1932
	Hupmobile, 8, 221	1932
	Hupmobile, 8, 222	1932
	Hupmobile, 322	1933
	Hupmobile, 326	1933
	Hupmobile, 8, 422F	1934
	Hupmobile, 8, 426I	1934
T 170-12	Auburn, 115	1928
	Gardner, 158	1931
T 171-12	Graham, Std. 6	1931
	Graham, Spec. 6	1931
	Graham, Spec. 8	1931
	Graham, 8, 57	1932
	Graham, Std., 8, 64	1933
	Graham, Cust. 8, 64	1933
	Graham, Super Cust. 8, 69	1934
	Hupmobile, 321	1933
	Hupmobile, 6, 421K	1934
	Hupmobile, 6, 421A	1934
	Hupmobile, 8, 427T	1934
T 172-12	Auburn, 8-100	1932
T 172-164	Auburn, 8-101	1933
	Auburn, 8-105	1933
T 178-174	Durant, 75	1928
	Durant, Six, 70	1929
T 181-174	Dodge Bros., 4, 128	1928
	Dodge Bros., Victory 6	1928
	Dodge Bros., Standard 6	1928
T 186-174	Studebaker, Dict. 6, EU	1927
	Studebaker, Standard 6, EU	1927
	Studebaker, Dictator, 6, GE	1928
T 188-30	Elcar, 95	1929
	Elcar, 96	1929
	Graham-Paige, 614	1928
	Marmon, 8-79	1930
	Marmon, 8-125, HH	1932
	Hupmobile, Cent. 8, L	1931
	Hupmobile, 8, 218	1932
	Peerless, Master 8, B	1930
	Peerless, Master 8, B	1931
	Peerless, Master 8, B	1932
	Reo, Wolverine, 6, B	1928
	Reo, Mate, 6, B2	1929
	Reo, 6, 15	1930
	Reo, 6, 15	1931
T 207-19	Stutz, 6, LAA	1932
T 210-211	Pierce-Arrow, 6, 36	1928
T 225-226	Dodge, 6, DP	1933
	Plymouth, 6, PC	1932
	Plymouth, Std. 6, PC	1933
	Plymouth, DL, 6, PD	1933
T 228-226	DeVaux, 6-75	1932
	Durant, 614	1930
	Durant, 619	1931
	Durant, 6-10	1931
T 231-223	Auburn, 76	1928
	Auburn, 88	1928
	Auburn, 6-80	1929
	Auburn, 8-90	1929
	Auburn, 6-85	1930
	Auburn, 8-95	1930
	Gardner, 120	1929
	Gardner, 125	1929
	Gardner, 136	1930
	Gardner, 140	1930
	Gardner, 136	1931
	Gardner, 148	1931
	Jordan, 6, E	1929
	Jordan, 8, 80, T	1931
	Kissel, 6, 73	1930
	Marmon, 8, 78	1929
	Moon, 6-72	1929
	Peerless, 6-81	1929
	Windsor, 6-69	1929
	Windsor, 6-72	1929
	Windsor, 6-77	1929
	Willys-Knight, 56	1928
	Willys-Knight, 70B	1929
	Willys-Knight, 87	1930
	Willys-Knight, 70B	1930
T 232-226	Chrysler, 66	1930
	Chrysler, 6, CJ	1931
	Chrysler, 66	1931
	Chrysler, 6, CM	1931
	Chrysler, 6, CI	1932
	Chrysler, 6, CO	1933
	Chrysler, 6, CA	1934
	DeSoto, 6, K	1929
	DeSoto, 6, CK	1930
	DeSoto, 8, CF	1930
	DeSoto, 6, SA	1931
	DeSoto, 8, CF	1931
	DeSoto, 6, SC	1932
	DeSoto, 6, SD	1933
	DeSoto, 6, SE	1934
	Dodge Bros., 6, DD	1930
	Dodge Bros., 6, DB	1930
	Dodge Bros., Senior 6	1930
	Dodge Bros., 8, DC	1930
	Dodge Bros., 6, DH	1931
	Dodge Bros., 8, DG	1931
	Dodge, 6, DL	1932
	Dodge, 6, DR, DS	1934
	Franklin Olympic, 18B	1933
	Franklin Olympic, 6, 18	1934
	Nash, Single 6, 450	1930
	Nash, 6-60	1931
	Nash, 870	1931
	Nash, 8-80	1931
	Nash, 960	1932
	Nash, 970	1932
	Nash, 980	1932
	Plymouth, 4, Q	1929
	Plymouth, 4, U, U30	1930
	Plymouth, 4, PA	1931
	Plymouth, 4, PB	1932
	Plymouth, 6, PF, PG	1934
	Plymouth, De Luxe 6, PE	1934
	Reo, S	1932
	Reo, 6, S2	1933
	Reo, 6, S4	1934
	Studebaker, Dictator, 6, GE	1929
	Studebaker, Com'der, 6, GJ	1929
	Studebaker, Com'der, 8, FD	1929
	Studebaker, Com., 6, GJ	1930
	Studebaker, Com., 8, FD	1930
	Studebaker, Com., 8-70	1931
	Studebaker, Com., 8, 71	1932
	Studebaker, Com., 8, 73	1933
T 237-230	Chrysler, 65	1929
	Chrysler, 75	1929
	Chrysler, 8, Std., CD	1930
	Chrysler, 8, CD	1931
	Chrysler, 8, CP	1932
	Chrysler, Royal 8, CT	1933
	Dodge Bros., 6, DA	1929
	Dodge, 8, DK	1932
	Dodge, 8, DO	1933
T 237-239	Chrysler, 8, CU	1934
	Chrysler, Imp. 8, CV	1934
	Chrysler, Imp. Cust. 8, CX	1934
T 240-238	Auburn, 8-98	1931
T 240-239	Willys-Knight, 66B	1929
	Willys-Knight, 66B	1930
T 257-258	Jordan, 8, G	1929
T 259-260	Nash, 1080, Spc. 8	1932
	Nash, 1090, Adv. 8	1932
	Nash, Spc. 8, 1170	1933
	Nash, Adv. 8, 1180	1933
	Packard, Light 8, 900	1932
	Packard, 8, 901	1932
	Packard, 8, 902	1932
	Packard, 8, 1001	1933
	Packard, 12, 1107, 8	1934
T 288-19	Blackhawk, L6	1929
	Blackhawk, L8	1929
T 291-126	Graham, Std. 6, 65	1933
	Graham, Std. 6, 68	1934
	Graham, De Luxe 6, 68	1934
	Graham, Spec. 8, 67	1934
	Graham, Super Spc. 8, 69S	1934
	Graham, Std. 8, 67	1934
	Hudson, 8	1934
	Hupmobile, 6, 417W	1934
	Hupmobile, 6, 421J	1934
	LaFayette, 6, 110	1934
T 316-12	Auburn, Cust. 6, 52Y	1934
T 300	Ford, T	1927
T 307	Cord, 8, L-29	1930
	Cord, 8, L-30	1931

Interchangeable Front Wheel Inner Bearings

DIRECTIONS—All Front Wheel Inner Bearings listed under one number, such as B183, are interchangeable The letter T indicates a taper roller bearing and B indicates a ball or roller bearing. The first number after the T is for the cup and the other is for the cone Also read directions at top of page 74.

B 40	Stutz, 8, BB	1928
B 66	Duesenberg, J	1929
	Duesenberg, J	1930
	Duesenberg, J	1931
	Duesenberg J	1932
	Duesenberg J	1933
	Duesenberg, J	1934
B 157	Kissel, 6 70	1928
B 161	Nash Spec 6, 330	1928
	Nash, Adv 6 360	1928
	Nash, Spec 6, 430	1929
	Nash, Adv 6, 460	1929
	Nash, Twin Ign 6, 480	1930
B 183	Buick, 34 40	1934
	Chevrolet, 4, AA	1927
	Chevrolet 4, AB	1928
	Chevrolet, 6, AC	1929
	Chevrolet, 6 AD	1930
	Chevrolet, 6 AE	1931
	Chevrolet, 6, BA	1932
	Chevrolet, Mast 6, CA	1933
	Chevrolet Mast 6, DA	1934
	Pontiac, 6 27	1927
	Pontiac, 6 28	1928
	Pontiac, 6 29	1929
	Pontiac, 6 30	1930
	Pontiac, 6, 401	1931
	Pontiac, 6 402	1932
	Pontiac, 8, 601	1933
	Pontiac, 8, 603	1934
B 185	Buick, 115	1928
	Oakland, 6, 212	1928
B 187	Buick 120	1928
	Buick 128	1928
	LaSalle, V8, 303	1928
	LaSalle, V8, 328	1929
B 189	Chevrolet, Std 6 CC	1933
	Chevrolet, Std 6, DC	1934
B 191	Buick, 116	1929
	Buick, 40	1930
	Buick, 8 50	1931
	Buick 8 60	1931
	LaSalle, 8 350	1934
	Marmon 8, 78	1929
	Marquette, 6, 30	1930
	Pontiac, 8 302	1932
	Oakland, AA6	1929
	Oakland 8, 101	1930
	Oakland 8, 301	1931
	Oldsmobile, 6, F28	1928
	Oldsmobile, 6 F29	1929
	Oldsmobile, 6, F30	1930
	Oldsmobile, 6 F31	1931
	Oldsmobile, 6, F32	1932
	Oldsmobile 8, L32	1932
	Oldsmobile, 6 F33	1933
	Oldsmobile 8 L33	1933
	Oldsmobile 6 F34	1934
	Oldsmobile 8 L34	1934
	Viking, V29, V30	1930
B 193	Buick, 32 50	1932
	Buick, 32 60	1932
	Buick, 33 50	1933
	Buick, 33 60	1933
	Buick, 34 50	1934
	Buick, 34 60	1934
B 195	Buick, 121	1929
	Buick 129	1929
	Buick, 50	1930
	Buick, 60	1930
	Buick 8 80	1931
	Buick, 8 90	1931
	Buick 32 80	1932
	Buick 32 90	1932
	Buick, 33 80	1933
	Buick 33 90	1933
	Buick, 34 90	1934
B 197	Cadillac, V8 353	1930
	Cadillac, V16, 452	1930
	Cadillac, V8, 355A	1931
	Cadillac V12 370A	1931
	Cadillac, V16, 452A	1931
	Cadillac, V8 355B	1932
	Cadillac V12 370B	1932
	Cadillac, V16, 452B	1932
	Cadillac, V8 355C	1933
	Cadillac V12, 370C	1933
	Cadillac, V16, 452C	1933
	Cadillac, V8 355D	1934
	Cadillac V12 370D	1934
	Cadillac, V16, 452D	1934
	LaSalle, V8 340	1930
	LaSalle, V8, 345A	1931
	LaSalle, V8 345B	1932
	LaSalle, V8, 345C	1933
T 1-2	Ford, T	1927
T 15-12	Auburn, 115	1928
	Auburn, 120	1929
	Auburn, 125	1930
	Chandler, Big 6	1929
	Chandler, 85	1929
	Gardner, 130	1929
	Gardner, 158	1931
T 46-48	Cord, 8, L 29	1930
	Cord, 8, L 30	1931
	Cord, 8, L 30	1932
T 50-51	Hudson, Super 6	1928
	Hudson, Super 6	1929
T 54-55	Cadillac, V8, 341A	1928
	Cadillac, V8, 341B	1929
	Kissel 8, 95	1929
	Kissel, 8, 126	1929
	Kissel, 8, 126	1930
	Lincoln, V8	1928
	Lincoln, V8	1929
	Lincoln, V8	1930
	Lincoln V8	1931
	Lincoln V8	1932
	Lincoln, V12	1932
	Lincoln, V12 136	1933
	Lincoln, V12 145	1933
	Stearns Knight, H, 8 90	1929
	Stearns Knight, J, 8 90	1929
	Stearns Knight H 8 90	1930
	Stearns Knight, J 8 90	1930
	Stutz, 8, M	1929
	Stutz, 8, MA	1930
	Stutz 8 MB	1930
	Stutz, 8, MA	1931
	Stutz 8, MB	1931
	Stutz 8, SV16	1932
	Stutz, 8 DV32	1932
	Stutz, SV16	1933
	Stutz DV32	1933
	Stutz, 8, SV16	1934
	Stutz, 8 DV32	1934
T 63-64	Pierce Arrow, 6 36	1928
T 82-83	Ford A	1928
	Ford, A	1929
	Ford, A	1930
	Ford, A	1931
	Ford, A	1932
T 84-85	Ford, B	1932
	Ford, V8	1932
	Ford, V8 40	1933
	Ford, V8 40 34	1934
T 104-105	Essex, Super 6	1928
	Essex, Challenger, 6	1929
T 111-107	Durant, 75	1928
	Durant Six, 70	1929
	Durant 617	1930
	Durant, 6 12	1931
	Durant 6 14	1931
	Franklin, Airman 12A & B	1928
	Franklin, 130	1929
	Franklin, 135	1929
	Franklin, 137	1929
	Franklin 145	1930
	Franklin, 147	1930
	Franklin 15	1931
	Franklin Olympic 18	1932
	Jordan, 6 E	1929
	Jordan, 8 80 T	1930
	Jordan 8, 80 T	1931
	Reo Wolverine 6 B	1928
	Reo Mate 6 B2	1929
	Reo, 6 15	1930
T 111-112	Reo, 6, 15 .	1931
T 114-107	Studebaker, Dictator 6, GE	1929
	Studebaker Com'der, 6, GJ	1929
	Studebaker, Com der, 8 FD	1929
	Studebaker, Com 8 FD	1930
	Studebaker, Com 8 70	1931
	Studebaker, Com 8, 71	1932
	Studebaker, Com , 8 73	1933
	Studebaker, Pres , 8, C	1934
T 114-112	Nash, Std 6 320	1928
T 115-107	Auburn, 8 100	1932
	Auburn, 8 101	1933
	Auburn, 8 105	1933
	Auburn, Std 8, 50X	1934
	Auburn Cust 8, 50Y	1934
	Blackhawk, L6	1930
	Blackhawk, L8	1930
	Chrysler 8, Std CD	1930
	Chrysler, 8, CD	1931
	Chrysler, 8, CP	1932
	Chrysler Royal 8 CT	1933
	DeSoto, 6, SE	1934
	Dodge, 8, DK	1932
	Dodge, 8, DO	1933
	Stutz 6, LA	1931
	Stutz, LAA6	1933
T 115-116	Blackhawk, L6	1929
	Blackhawk L8	1929
	Stutz, 6, LAA	1932
T 117-107	Studebaker, Com , 6, GJ	1930
T 125-126	Studebaker Std 6, EU	1927
	Studebaker, Special 6	1927
	Studebaker, Dictator, 6, GE	1928
T 127-128	Willys Knight, 56	1928
	Willys Knight, 70A	1928
	Willys Knight, 66B	1929
T 131-126	Dodge Bros , 4 124	1927
	Dodge Bros , Senior 6	1928
	Dodge Bros Senior 6	1929
	Graham Paige, 619	1928
	Graham Paige, 629	1928
	Graham Paige, 835	1928
	Graham Paige 621	1929
	Graham Paige, 827	1929
	Graham Paige, 837	1929
	Graham, Std 8	1930
	Graham, Spec 8	1930
	Graham Cust 8, 127	1930
	Graham Cust 8, 137	1930
	Graham Cust 8	1931
	Pierce Arrow, 836	1933
	Pierce Arrow 836A	1934
	Pierce Arrow, 840A	1934
	Studebaker Pres 6, ES	1928
	Studebaker, Comm 6 GH	1928
	Studebaker, Com'der, 6 GB	1928
	Studebaker, Pres , 8 FH	1928
	Studebaker Pres 8 FH	1929
	Studebaker, Pres , 8, FE	1929
	Studebaker, Pres , 8 FH	1930
	Studebaker, Pres , 8, FE	1930
	Studebaker, Pres , 8 80, 90	1931
	Studebaker, Pres , 8 91	1932
	Studebaker Pres , 8 82	1933
	Studebaker, Spd , Pres , 8, 92	1933
T 131-128	Elcar 120	1929
	Franklin, 16	1932
	Franklin, Airman, 16B	1933
	Franklin, Airman, 6, 16	1934
	Gardner 150	1930
	Jordan 8, 90 G	1931
	Kissel, 8 95	1930
	Hupmobile, 8 C	1930
	Hupmobile 8 H	1930
	Hupmobile 8 C	1931
	Hupmobile, 8, H	1931
	Hupmobile, 8, U	1931
	Hupmobile 8 237	1932
	Hupmobile, 8, 225	1932
	Hupmobile 8 221	1932
	Marmon, 8 79	1930
	Marmon, Big 8 89	1930
	Marmon, 88 CC	1931
	Marmon 8 125 HH	1932
	Packard, 8 726	1930
	Packard 8, 733	1930
	Packard, 8 826	1931
	Packard 8 833	1931
	Packard Light 8 900	1932
	Packard 8, 901	1932
	Packard 8, 902	1932
	Packard, 8, 1002	1933
	Packard, 8, 1001	1933

	Packard, Super 8, 1003, 4	1933
	Packard, 8, 1100, 1, 2	1934
	Packard, Super 8, 1103, 4, 5	1934
	Peerless, 8 125	1929
	Peerless, Master 8, B	1930
	Peerless, Custom 8 C	1930
	Peerless, Master 8, B	1931
	Peerless, Custom 8, C	1931
	Peerless, Master 8, B	1932
	Peerless Custom 8, C	1932
	Reo Flying Cloud 6, A	1928
	Reo, Master 6, C	1929
	Reo 6, 20	1930
	Reo, 6, 25	1930
	Reo, 6, 20	1931
	Reo, 6, 25	1931
	Reo, 8, 30, 31	1931
	Reo, 8 35	1931
	Reo, 6 21, 25	1932
	Reo, 8 21	1932
	Reo 8 25	1932
	Reo, 8, 31	1932
	Reo, 8, 35 52	1932
	Reo, Royale, N1, 2	1933
	Reo, Royale 8, N1 2	1934
	Willys Knight, 66B	1930
T 135-128	Chrysler, Imp 8 CG	1931
	Chrysler, Imp 8 CH	1932
	Chrysler Imp Cust 8 CL	1932
	Chrysler, Imp 8, CQ	1933
	Chrysler, Imp Cust 8, CL	1933
	Chrysler, 8 CA	1934
	Chrysler, Imp 8 CU	1934
	Chrysler, Imp Cust 8, CX	1934
T 161-12	Auburn, 12 160	1932
	Auburn, 12 161	1933
	Auburn 12 165	1933
	Franklin, 12, 17	1932
	Franklin, 12, 17B	1933
	Franklin V12, 17	1934
	Kissel, 6 73	1929
	Locomobile, 86	1929
	Locomobile 88	1929
	Stearns Knight, M, 6 80	1929
	Stearns Knight, N 6 80	1929
	Willys Knight, 66A	1928
T 165-159	Chrysler, 80 L	1928
	Chrysler, Imp 6	1929
	Chrysler, Imp 6	1930
	Studebaker, Big 6, ES	1927
	Studebaker, Dict, 6 EU	1927
	Studebaker, Comm 6, EW	1927
T 166-12	Marmon, 16	1931
	Marmon, 16	1932
	Marmon, 16	1933
T 169-12	Lincoln V12	1934
	Nash, Twin Ign 8 490	1930
	Nash, 8 90	1931
	Nash, 990	1932
	Nash, Amb 8, 1190	1933
	Packard, 6 526	1928
	Packard, 6, 533	1928
	Packard, 8, 443	1928
	Packard, 8 626	1929
	Packard 8, 633	1929
	Packard, 8, 640	1929
	Packard, 8, 645	1929
	Packard, 8 740	1930
	Packard, 8, 745	1930
	Packard, 8, 840	1931
	Packard, 8, 845	1931
	Packard 8, 903	1932
	Packard, 8 904	1932
	Packard, Twin 6 905, 6	1932
	Packard, 12, 1005 6	1933
	Packard, 12, 1107, 8	1934
T 190-25	Pierce-Arrow, 6, 81	1928
	Pierce Arrow, 125	1929
	Pierce Arrow, 126	1929
	Pierce Arrow, 132, C	1930
	Pierce Arrow, 134, B	1930
	Pierce Arrow, 139, B	1930
	Pierce Arrow, 144 A	1930
	Pierce Arrow, 43	1931
	Pierce Arrow, 42	1931
	Pierce Arrow, 41	1931
	Pierce Arrow, 54	1932
	Pierce Arrow, 53	1932
	Pierce Arrow, 52	1932
	Pierce Arrow, 51	1932
	Pierce Arrow, 1236	1933
	Pierce Arrow, 1242	1933
	Pierce Arrow, 1247	1933
	Pierce Arrow, 1240A	1934
	Pierce Arrow, 1248A	1934
T 214-215	Austin, A	1931
	Austin, A	1932
	Austin,	1933
	Austin	1934
T 222-223	Erskine American, 6, 51	1928
	Erskine, 6, 52 .	1929
T 225-223	Erskine, 6, 53	1930
	Nash, Std 6, 420	1929
	Nash, Single, 6, 450	1930
	Rockne, 6 75	1932
	Studebaker, 6 53	1930
	Studebaker, Dict, 6, GL	1930
	Studebaker Dict, 8, FC	1930
	Studebaker 6 54	1931
	Studebaker, Dict, 8 61	1931
	Studebaker, 6, 55	1932
	Studebaker, Dict, 8, 62	1932
	Studebaker, 6 56	1933
	Studebaker, Comm 8, B	1934
T 227-223	Auburn, 76	1928
	Auburn, 88	1928
	Auburn, 6 80	1929
	Auburn, 8 90	1929
	Auburn, 6 85	1930
	Auburn, 8 95	1930
	Auburn, 8 98	1931
	Chandler, 75	1929
	Chandler, 65	1929
	Elcar, 75	1929
	Elcar, 95	1929
	Elcar, 96	1929
	Gardner, 120	1929
	Gardner, 125	1929
	Gardner, 136	1930
	Gardner, 140	1930
	Gardner, 136	1931
	Gardner, 148	1931
	Moon, 6 72	1929
	Peerless, 6 81	1929
	Windsor, 6 69	1929
	Windsor, 6 72	1929
	Windsor, 6 77	1929
T 227-226	Dodge Bros, 4, 128	1928
	Dodge Bros, Victory 6	1928
	Dodge Bros, Standard 6	1928
T 228-223	Auburn, Std 6, 52X	1934
	Auburn, Cust 6, 52Y	1934
	Chrysler, 52	1928
	Chrysler, 66	1930
	Chrysler, 6, CM	1931
	Chrysler, 6, CI	1931
	Chrysler, 66	1931
	Chrysler 6 CI	1932
	Chrysler, 6, CO	1933
	Continental Ace, 41A	1933
	Continental, 4 41	1934
	DeSoto, 6, K	1929
	DeSoto, 6, CK	1930
	DeSoto 8, CF	1930
	DeSoto, 6, SA	1931
	DeSoto, 8 CF	1931
	DeSoto 6, SC	1932
	DeSoto, 6, SD	1933
	DeVaux, 6 75	1932
	Dodge Bros, 6, DA	1929
	Dodge Bros, 6 DD	1930
	Dodge Bros, 6 DB	1930
	Dodge Bros, Senior 6	1930
	Dodge Bros, 8, DC	1930
	Dodge Bros, 6 DH	1931
	Dodge Bros, 8, DG	1931
	Dodge 6, DL	1932
	Durant, 55	1928
	Durant, 65	1928
	Durant, Four, 4	1929
	Durant, Six, 60	1929
	Durant, Six, 66	1929
	Durant 63	1930
	Durant, 614	1930
	Durant 619	1931
	Durant, 6 10	1931
	Essex, Challenger, 6	1930
	Essex, Challenger, 6	1931
	Essex Greater 6	1932
	Franklin, Olympic, 18B	1933
	Franklin, Olympic, 6, 18	1934
	Graham Paige, 610	1928
	Graham Paige, 614	1928
	Graham Paige, 612	1929
	Graham-Paige, 615	1929
	Graham, Std 6	1930
	Graham, Spc 6	1930
	Graham, Prosperity 6	1931
	Graham, Std 6	1931
	Graham, Spec 6	1931
	Graham Spec 8	1931
	Graham, 6 56, 58	1932
	Graham, 8 57	1932
	Graham, Std 6, 65	1933
	Graham Std 8, 64	1933
	Graham, Cust 8, 64	1933
	Graham, Special 8 67	1934
	Graham, Supercharged Sp 8, 69S	1934
	Graham, Std 8, 67	1934
	Graham, Supercharged Cust 8, 69	1934
	Hudson, Great 8	1930
	Hudson, 8	1931
	Hudson, 8	1932
	Hudson, Super 6	1933
	Hudson, 8	1933
	Hudson 8	1934
	Hupmobile 6, A Century	1928
	Hupmobile, 8 M, Century	1928
	Hupmobile, 6, A, Century	1929
	Hupmobile 8 M, Century	1929
	Hupmobile, 6, S, Century	1930
	Hupmobile, Cent, 6, S	1931
	Hupmobile, Cent., 8, L	1931
	Hupmobile, 8, 222	1932
	Hubmobile, 8, 226	1932
	Hupmobile, 6, 214	1932
	Hupmobile, 6, 216	1932
	Hupmobile, 8, 218	1932
	Hupmobile, 321	1933
	Hupmobile, 322	1933
	Hupmobile, 326	1933
	Hupmobile, 417W	1934
	Hupmobile, 421K	1934
	Hupmobile 6, 421A	1934
	Hupmobile, 6, 421J	1934
	Hupmobile, 8, 422I	1934
	Hupmobile, 8, 426I	1934
	Hupmobile, 8 427T	1934
	Marmon, 8, 68	1929
	Marmon, 8 Roosevelt	1930
	Marmon, 8 69	1930
	Marmon, 70	1931
	Peerless, Std 8, A	1930
	Peerless, Std 8 A	1931
	Plymouth, 4, Q	1929
	Plymouth, 4, U, U30	1930
	Plymouth 4, PA	1931
	Plymouth, 4, PB	1932
	Reo, S	1932
	Reo, 6, S2	1933
	Reo, 6, S4	1934
	Roosevelt	1929
	Roosevelt	1930
	Star, 4, M	1928
	Willys Knight, 70B	1929
	Willys Knight, 87	1930
	Willys Knight, 70B	1930
	Willys Knight, 95	1932
	Whippet, 4, 96	1927
	Whippet, 6	1927
	Whippet 4, 96	1928
	Whippet, 6 98	1928
	Whippet, 4, 96A	1929
	Whippet, 6, 98A	1929
	Whippet, 4 96A	1930
	Willys, 6, 98B	1930
	Willys Six, 97	1931
	Willys Six, 98D	1931
	Willys, 8 80	1931
	Willys Overland, 6 90	1932
T 228-230	Chrysler, 62	1928
	Chrysler, 72	1928
	Chrysler, 65	1929
	Chrysler, 75	1929
T 232-223	LaFayette, 6 110	1934
	Nash, Big 6, 1220	1934
	Nash, Adv 8 1280	1934
	Nash, Amb 8, 1290	1934
T 232-226	Nash, 6 60	1931
	Nash, 8 70	1931
	Nash, 8 80	1931
	Nash 960	1932
	Nash, 970	1932
	Nash 980	1932
	Nash 1060, Big 6	1932
	Nash 1070, Std 8	1932
	Nash, 1080, Spc 8	1932
	Nash 1090, Adv 8	1932
	Nash Big 6 1120	1933
	Nash, Std 8, 1130	1933
	Nash, Spc 8 1170	1933
	Nash, Adv 8, 1180	1933
T 233-234	Essex, Terraplane, 6	1933
	Essex, Terraplane, 8	1933
	Terraplane, 6	1934
T 235-234	Chrysler 6 CA	1934
	Continental Beacon, C 400	1933
	Continental Flyer C 600	1933
	Dodge, 6 DP	1933
	Dodge, 6, SE	1934
	Graham, Std 6 68	1934
	Graham De Luxe, 6, 68	1934
	Plymouth, 6 PC	1932
	Plymouth, Std 6, PC	1933
	Plymouth, DL 6 PD	1933
	Plymouth 6 PF, PG	1934
	Plymouth De Luxe 6 PE	1934
	Rockne, 6 65	1932
	Rockne 6, 10	1933
	Studebaker, Dict 6 A	1934
	Willys 77	1933
	Willys, 77	1934
T 237-238	Chrysler, 70	1930
	Chrysler, 77	1930
	Chrysler, 70	1931
T 237-239	Willys, 8 80D	1931
	Willys Knight, 66D	1931
	Willys Knight 66D	1932
	Willys Overland, 8 88	1932
T 248-253	Kissel, 6, 73	1930
T 254-253	Jordan, 8, G	1929
	Jordan 8, 90 G	1930
	Peerless 6 61	1929
	Peerless, 6 61A	1929
	Windsor, 8 82	1929
	Windsor, 8 92	1929

Interchangeable Front Wheel Outer Bearings

DIRECTIONS—All Front Wheel Outer Bearings listed under one number, such as B182, are interchangeable. The letter T indicates a taper roller bearing and B indicates a ball or roller bearing. The first number after the T is for the cup and the other is for the cone. Also read directions at top of page 74.

B 30
Stutz, 8, BB 1928

B 69
Duesenberg, J 1929
Duesenberg, J 1930
Duesenberg, J 1931
Duesenberg, J 1932
Duesenberg, J 1933
Duesenberg, J 1934

B 163
Nash, Spec. 6, 330 1928
Nash, Adv. 6, 360 1928
Nash, Spec. 6, 430 1929
Nash, Adv. 6, 460 1929
Nash, Twin Ign., 6, 480 1930

B 182
Buick, 34-40 1934
Chevrolet, 4, AA 1927
Chevrolet, 4, AB 1928
Chevrolet, 6, AC 1929
Chevrolet, 6, AD 1930
Chevrolet, 6, AE 1931
Chevrolet, 6, BA 1932
Chevrolet, Mast. 6, CA 1933
Chevrolet, Mast. 6, DA 1934
Pontiac, 6-27 1927
Pontiac, 6-28 1928
Pontiac, 6-29 1929
Pontiac, 6-30 1930
Pontiac, 6, 401 1931
Pontiac, 6, 402 1932
Pontiac, 8, 601 1933
Pontiac, 8, 603 1934

B 184
Buick, 115 1928
Oakland, 6, 212 1928

B 186
Buick, 120 1928
Buick, 128 1928
LaSalle, V8, 303 1928
LaSalle, V8, 328 1929

B 188
Chevrolet, Std. 6, CC 1933
Chevrolet, Std. 6, DC 1934

B 190
Buick, 116 1929
Buick, 40 1930
Buick, 8-50 1931
Buick, 8-60 1931
LaSalle, 8, 350 1934
Marmon, 8, 78 1929
Marquette, 6, 30 1930
Oakland, AA6 1929
Oakland, 8, 101 1930
Oakland, 8, 301 1931
Oldsmobile, 6, F28 1928
Oldsmobile, 6, F29 1929
Oldsmobile, 6, F30 1930
Oldsmobile, 6, F31 1931
Oldsmobile, 6, F32 1932
Oldsmobile, 8, L32 1932
Oldsmobile, 6, F33 1933
Oldsmobile, 8, L33 1933
Oldsmobile, 6, F34 1934
Oldsmobile, 8, L34 1934
Pontiac, 8, 302 1932
Viking, V29, V30 1930

B 192
Buick, 32-50 1932
Buick, 32-60 1932
Buick, 33-50 1933
Buick, 33-60 1933
Buick, 34-50 1934
Buick, 34-60 1934

B 194
Buick, 121 1929
Buick, 129 1929
Buick, 50 1930
Buick, 60 1930
Buick, 8-80 1931
Buick, 8-90 1931
Buick, 32-80 1932
Buick, 32-90 1932
Buick, 33-80 1933
Buick, 33-90 1933
Buick, 34-90 1934

B 196
Cadillac, V8, 353 1930
Cadillac, V16, 452 1930
Cadillac, V8, 355A 1931
Cadillac, V12, 370A 1931
Cadillac, V16, 452A 1931
Cadillac, V8, 355B 1932
Cadillac, V12, 370B 1932
Cadillac, V16, 452B 1932
Cadillac, V8, 355C 1933
Cadillac, V12, 370C 1933
Cadillac, V16, 452C 1933
Cadillac, V8, 355D 1934
Cadillac, V12, 370D 1934
Cadillac, V16, 452D 1934
LaSalle, V8, 340 1930
LaSalle, V8, 345A 1931
LaSalle, V8, 345B 1932
LaSalle, V8, 345C 1933

T 3-4
Hudson, Super 6 1928
Hudson, Super 6 1929

T 3-5
Cadillac, V8, 341A 1928
Cadillac, V8, 341B 1929
Kissel, 8, 95 1929
Kissel, 8, 126 1929
Kissel, 8, 126 1930
Lincoln, V8 1928
Lincoln, V8 1929
Lincoln, V8 1930
Lincoln, V8 1931
Lincoln, V8 1932
Lincoln, V12 1932
Lincoln, V12, 136 1933
Lincoln, V12-145 1933
Stearns-Knight, H, 8-90 1929
Stearns-Knight, J, 8-90 1929
Stearns-Knight, H, 8-90 1930
Stearns-Knight, J, 8-90 1930
Stutz, 8, M 1929
Stutz, 8, MA 1930
Stutz, 8, MB 1930
Stutz, 8, MA 1931
Stutz, 8, MB 1931
Stutz, 8, SV16 1932
Stutz, 8, DV32 1932
Stutz, SV16 1933
Stutz, DV32 1933
Stutz, 8, SV16 1932
Stutz, 8, DV32 1932

T 3-6
Pierce-Arrow, 6, 36 1928

T 43-42
Cord, 8, L-29 1930
Cord, 8, L-30 1931
Cord, 8, L-30 1932

T 86-87
Ford, A 1928
Ford, A 1929
Ford, A 1930
Ford, A 1931
Ford, A 1932

T 88-89
Ford, B 1932
Ford, V8 1932
Ford, V8-40 1933
Ford, V8, 40-34 1934

T 90-91
Franklin, Olympic, 18B 1933
Franklin, Olympic, 6, 18 1934
Reo, S 1932
Reo, 6, S2 1933
Reo, 6, S-4 1934

T 90-92
Auburn, 8-100 1932
Auburn, 8-101 1933
Auburn, 8-105 1933
Auburn, Std. 8, 50X 1934
Auburn, Cust. 8, 50Y 1934
Chrysler, 62 1928
Chrysler, 72 1928
Chrysler, 65 1929
Chrysler, 75 1929
Chrysler, 70 1930
Chrysler, 77 1930
Chrysler, 70 1931
Chrysler, 8, Std., CD 1930
Chrysler, 8, CD 1931
Chrysler, 8, CP 1932
Chrysler, Royal 8, CT 1933
Dodge, 8, DK 1932
Dodge, 8, DO 1933
Studebaker, Dict., 6, GE 1929
Studebaker, Com'der, 6, GJ 1929
Studebaker, Com'der, 8, FD 1929
Studebaker, Com., 8-70 1931
Studebaker, Com., 6, GJ 1930
Studebaker, Com., 8, FD 1930
Studebaker, Com., 8, 71 1932
Studebaker, Com., 8, 73 1933
Studebaker, Pres., 8, C 1934
Willys-Knight, 70B 1929
Willys-Knight, 87 1930
Willys-Knight, 70B 1930
Willys, 8-80D 1931
Willys-Knight, 66D 1931
Willys-Knight, 66D 1932
Willys-Overland, 8-88 1932

T 93-94
Durant, 75 1928
Durant, Six, 70 1929
Willys-Knight, 56 1928
Willys-Knight, 70A 1928
Willys-Knight, 66B 1929
Willys-Knight, 66B 1930

T 93-95
Dodge Bros., 4, 124 1927
Dodge Bros., Senior 6 1928
Dodge Bros., Senior 6 1929
Studebaker, Special 6 1927

T 96-94
Blackhawk, L6 1929
Blackhawk, L8 1929
Blackhawk, L6 1930
Blackhawk, L8 1930
Chrysler, Imp. 8, CG 1931
Chrysler, Imp. 8, CH 1932
Chrysler, Imp. Cust. 8, CL 1932
Chrysler, Imp. 8, CQ 1933
Chrysler, Imp. Cust. 8, CL 1933
DeSoto, 6, SE 1934
Durant, 617 1930
Durant, 6-12 1931
Durant, 6-14 1931
Graham-Paige, 619 1928
Graham-Paige, 629 1928
Graham-Paige, 835 1928
Graham-Paige, 621 1929
Graham-Paige, 827 1929
Graham-Paige, 837 1929
Graham, Std. 8 1930
Graham, Spec. 8 1930
Graham, Cust. 8, 127 1930
Graham, Cust. 8, 137 1930
Graham, Cust. 8 1931
Hudson, Great 8 1930
Hudson, 8 1931
Hudson, 8 1932
Hudson, 8 1933
Jordan, 8, G 1929
Jordan, 8, 90, G 1930
LaFayette, 6, 110 1934
Marmon, 8-79 1930
Marmon, Big 8-89 1930
Marmon, 88, CC 1931
Marmon, 8-125, HH 1932
Nash, Std. 6, 320 1928
Nash, 6-60 1931
Nash, 8-70 1931
Nash, 8-80 1931
Nash, 960 1932
Nash, 970 1932
Nash, 980 1932
Nash, 1060, Big 6 1932
Nash, 1070, Std. 8 1932
Nash, 1080, Spc. 8 1932
Nash, 1090, Adv. 8 1932
Nash, Big 6, 1120 1933
Nash, Std. 8, 1130 1933
Nash, Spc. 8, 1170 1933
Nash, Adv. 8, 1180 1933
Nash, Big 6, 1220 1934
Nash, Adv. 8, 1280 1934
Peerless, 6-61 1929
Peerless, 6-61A 1929
Peerless, Master 8, B 1930
Peerless, Custom 8, C 1930
Peerless, Master 8, B 1931
Peerless, Custom 8, C 1931
Peerless, Master 8, B 1932
Peerless, Custom 8, C 1932
Reo Wolverine, 6, B 1928
Reo Flying Cloud, 6, A 1928
Reo Mate, 6, B2 1929
Reo, Master 6, C 1929
Reo, 6, 15 1930
Reo, 6, 20 1930
Reo, 6, 25 1930
Reo, 6, 15 1931
Reo, 6, 20 1931
Reo, 6, 25 1931
Reo, 8, 30, 31 1931
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Reo, 8-21 1932

	Reo, 8 25	1932
	Reo, 8, 31	1932
	Reo, 8, 35, 52	1932
	Reo, Royale N1, 2	1933
	Reo Royale, 8, N1, 2	1934
	Stutz, 6, LA	1931
	Stutz, 6, LAA	1932
	Stutz, AA6	1933
	Windsor 8 82	1929
	Windsor, 8 92	1929
T 96-95	Hupmoble, 6, A Century	1928
	Hupmobile, 8, M, Century	1928
	Hupmobile, 6, A, Century	1929
	Hupmobile, 8, M, Century	1929
	Hupmobile, 6, S Century	1930
	Hupmobile, 8, C	1930
	Hupmobile, 8, H	1930
	Hupmobile, Cent 6, S	1931
	Hupmobile, Cent 8, L	1931
	Hupmobile, 8, C	1931
	Hupmobile, 8, H	1931
	Hupmobile, 8 U	1931
	Hupmobile, 6, 214	1932
	Hupmobile, 6 216	1932
	Hupmobile, 8, 218	1932
	Hupmobile, 8, 221	1932
	Hupmobile, 8, 222	1932
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	Hupmobile, 8, 226	1932
	Hupmobile 8, 237	1932
	Hupmobile, 321	1933
	Hupmobile, 322	1933
	Hupmobile, 326	1933
	Hupmobile 6, 417W	1934
	Hupmobile, 6, 421K	1934
	Hupmobile, 6, 421A	1934
	Hupmobile 6, 421J	1934
	Hupmobile, 8, 422F	1934
	Hupmobile 8, 426I	1934
	Hupmobile, 8, 427T	1934
T 98-94	Hudson 8	1934
	Jordan, 6 E	1929
	Jordan, 8, 80, T	1930
T 90-94	Franklin, Airman, 12A & B	1928
	Franklin, 130	1929
	Franklin 135	1929
	Franklin, 137	1929
	Franklin, 145	1930
	Franklin, 147	1930
	Franklin 15	1931
	Franklin, Olympic 18	1932
	Gardner 150	1930
	Jordan, 8 80, T	1931
	Jordan, 8 90, G	1931
	Kissel, 8, 95	1930
	Peerless 8, 125	1929
	Pierce Arrow, 836	1933
	Pierce Arrow, 836A	1934
	Pierce Arrow 840A	1934
	Studebaker Std 6, EU	1927
	Studebaker, Pres, 6 ES	1928
	Studebaker, Comm, 6 GH	1928
	Studebaker, Dict, 6, GE	1928
	Studebaker, Com'der, 6 GB	1928
	Studebaker, Pres, 8, FH	1928
	Studebaker Pres, 8, FH	1929
	Studebaker Pres, 8, FE	1929
	Studebaker Pres, 8, FH	1930
	Studebaker, Pres, 8 FE	1930
	Studebaker, Pres, 8 89, 90	1931
	Studebaker, Pres 8 91	1932
	Studebaker, Pres 8 82	1933
	Studebaker, Spd Pres, 8, 92	1933
T 100-11	Auburn 115	1928
	Auburn, 120	1929
	Auburn, 125	1930
	Chandler, 85	1929
	Chandler Big 6	1929
	Gardner 130	1929
	Gardner, 158	1931
T 101-11	Essex Super 6	1928
	Essex, Challenger, 6	1929
T 106-107	Lincoln, V12	1934
T 118-119	Locomobile 86	1929
	Locomobile, 88	1929
T 118-120	Elcar 120	1929
	Marmon, 16	1932
	Marmon, 16	1933
	Marmon, 16	1931
T 121-120	Pierce Arrow, 1240A	1934
	Pierce Arrow, 1248A	1934
T 121-119	Franklin, 12, 17	1932
	Kissel, 6, 73	1929
	Nash Twin Ign, 8, 490	1930
	Nash, 8 90	1931
	Nash, 990	1932
	Nash, Amb 8, 1190	1933
	Nash, Amb 8, 1290	1934
	Packard, 6, 526	1928
	Packard, 6, 533	1928
	Packard, 8, 443	1928
	Packard, 8, 626	1929
	Packard, 8, 633	1929
	Packard, 8, 640	1929
	Packard, 8, 645	1929
	Packard, 8, 726	1930
	Packard, 8 733	1930
	Packard 8, 740	1930
	Packard, 8, 745	1930
	Packard 8, 826	1931
	Packard 8, 833	1931
	Packard 8 840	1931
	Packard, 8 845	1931
	Packard, Light 8, 900	1932
	Packard, 8, 901	1932
	Packard, 8 902	1932
	Packard, 8, 903	1932
	Packard, 8 904	1932
	Packard, Twin 6 905, 6	1932
	Packard 8 1001	1933
	Packard, Super 8, 1003, 4	1933
	Packard, 12, 1005, 6	1933
	Packard, 8, 1002	1933
	Packard, 8 1100 1 2	1934
	Packard Super 8, 1103 4, 5	1934
	Packard, 12, 1107, 8	1934
	Pierce Arrow, 54	1932
	Pierce Arrow, 53	1932
	Pierce Arrow, 52	1932
	Pierce Arrow, 51	1932
	Pierce Arrow, 1236	1933
	Pierce Arrow 1242	1933
	Pierce Arrow, 1247	1933
T 121-120	Auburn 12 160	1932
	Auburn, 12 161	1933
	Auburn, 12 165	1933
	Chrysler, 80L	1928
	Chrysler, Imp 6	1929
	Chrysler Imp 6	1930
	Franklin, 16	1932
	Franklin, Airman, 16B	1933
	Franklin, 12 17B	1933
	Franklin, Airman, 6, 16	1934
	Franklin, V12, 17	1934
	Pierce Arrow, 6, 81	1928
	Pierce Arrow, 125	1929
	Pierce Arrow, 126	1929
	Pierce Arrow, 132 C	1930
	Pierce Arrow, 134, B	1930
	Pierce Arrow, 139 B	1930
	Pierce Arrow, 144, A	1930
	Pierce Arrow, 43	1931
	Pierce Arrow, 42	1931
	Pierce Arrow, 41	1931
	Stearns Knight M, 6 80	1929
	Stearns Knight N 6 80	1929
	Studebaker, Big 6 ES	1927
	Studebaker, Dict 6, EU	1927
	Studebaker, Comm, 6, EW	1927
	Willys Knight, 66A ..	1928
T 212-213	Austin, A	1931
	Austin, A	1932
	Austin	1933
	Austin	1934
T 216-217	Dodge Bros, 4 128	1928
	Dodge Bros, Victory 6	1928
	Dodge Bros, Standard 6	1928
T 216-218	Auburn, 76	1928
	Auburn, 88	1928
	Auburn 6 80	1929
	Auburn, 8 90	1929
	Auburn, 6 85	1930
	Auburn, 8 95	1930
	Auburn, 8 98	1931
	Chrysler 52	1928
	Chrysler, 66	1930
	Chrysler, 6 CJ	1931
	Chrysler, 66	1931
	Chrysler, 6, CM	1931
	Chrysler, 6 CI	1932
	Chrysler, 6, CO	1933
	Chrysler, 6 CA	1934
	Continental Ace 41A	1933
	Continental 4 41	1934
	Chandler, 65	1929
	Chandler 75	1929
	DeSoto, 6, K	1929
	DeSoto, 6, CK	1930
	DeSoto, 8, CF	1930
	DeSoto, 6, SA	1931
	DeSoto, 8, CF	1931
	DeSoto 6, SC	1932
	DeSoto, 6, SD	1933
	DeVaux, 6 75	1932
	Dodge Bros, 6 DA	1929
	Dodge Bros, 6 DD	1930
	Dodge Bros, 6 DB	1930
	Dodge Bros, Senior 6	1930
	Dodge Bros, 8 DC	1930
	Dodge Bros 6 DH	1931
	Dodge Bros, 8 DG	1931
	Dodge, 6, DL	1932
	Dodge, 6, DP	1933
	Dodge 6, DR, DS	1934
	Durant, 55	1928
	Durant, 65	1928
	Durant, Four 4	1929
	Durant, Six, 60	1929
	Durant, Six 66	1929
	Durant, 63	1930
	Durant, 614	1930
	Durant, 6 10	1931
	Durant 619	1931
	Elcar, 75	1929
	Elcar, 95	1929
	Elcar 96	1929
	Erskine American, 6, 51	1928
	Erskine, 6 52	1929
	Erskine, 6, 53	1930
	Essex, Challenger, 6	1930
	Essex, Challenger, 6	1931
	Essex, Greater 6	1932
	Gardner, 120	1929
	Gardner, 125	1929
	Gardner, 136	1930
	Gardner, 140	1930
	Gardner, 136	1931
	Gardner 148	1931
	Graham Paige, 610	1928
	Graham Paige 614	1928
	Graham Paige, 612	1929
	Graham Paige, 615	1929
	Graham, Std 6	1930
	Graham, Spc 6	1930
	Graham, Prosperity 6	1931
	Graham, Std 6	1931
	Graham, Spec 6	1931
	Graham, Spec 8	1931
	Graham, 6 56, 58	1932
	Graham, 8 57	1932
	Graham, Std 6, 65	1933
	Graham Std 8, 64	1933
	Graham, Cust 8 64	1933
	Graham, Std 6, 68	1934
	Graham, De Luxe 6, 68	1934
	Graham, Spec 8, 67	1934
	Graham, Super Spec, 69S	1934
	Graham, Std 8, 67	1934
	Graham, Super Cust 8, 69	1934
	Hudson, Super 6	1933
	Kissel 6, 73	1930
	Marmon, 8, 68	1929
	Marmon, 8, Roosevelt	1930
	Marmon, 8 69	1930
	Marmon, 70	1931
	Moon, 6 72	1929
	Nash, Std 6 420	1929
	Nash, Single 6, 450	1930
	Peerless 6 81	1929
	Peerless, Std 8, A	1930
	Peerless Std 8 A	1931
	Plymouth, 4, Q	1929
	Plymouth, 4, U, U30	1930
	Plymouth, 4, PA	1931
	Plymouth, 4, PB	1932
	Plymouth 6, PC	1932
	Plymouth, Std 6, PC	1933
	Plymouth, DL 6, PD	1933
	Plymouth, 6, PF, PG	1934
	Plymouth De Luxe 6, PE	1934
	Rockne, 6 65	1932
	Rockne, 6 75	1932
	Rockne, 6, 10	1933
	Roosevelt .	1929
	Roosevelt	1930
	Star, 4, M	1928
	Studebaker, 6, 53	1930
	Studebaker, Dict 6 GL	1930
	Studebaker, Dict, 8, FC	1930
	Studebaker, 6, 54	1931
	Studebaker, Dict, 8 61	1931
	Studebaker, 6 55	1932
	Studebaker, Dict, 8, 62	1932
	Studebaker, 6, 56	1933
	Studebaker Dict 6, A	1934
	Studebaker, Comm 8, B	1934
	Willys Knight, 95	1932
	Willys, 77	1933
	Willys, 77	1934
	Willys Overland, 6 90	1932
	Windsor, 6 69	1929
	Windsor, 6 72	1929
	Windsor, 6 77	1929
	Whippet, 4, 96	1927
	Whippet, 6	1927
	Whippet 4 96	1928
	Whippet 6, 98	1928
	Whippet, 4, 96A	1929
	Whippet, 6, 98A	1929
	Whippet, 4 96A	1930
	Willys 6 98B	1930
	Willys Six, 97	1931
	Willys Six, 98D	1931
	Willys 8 80	1931
T 216-219	Auburn, Std 6 52X	1934
	Auburn, Cust 6, 52Y	1934
	Continental Beacon, C 400	1933
	Continental Flyer, C 600	1933
T 220-219	Essex Terraplane 6	1933
	Essex, Terraplane 8	1933
	Terraplane 6	1934
T 309	Ford T	1927
T 317-318	Chrysler, 8 CU	1934
	Chrysler, Imp 8, CV	1934
	Chrysler, Imp Cust 8, CX	1934

ORPHAN CAR DIRECTORY

Parts for the following Cars may be obtained from firms whose number corresponds to the number appearing after the name of the car.

NAME OF CAR

ABBOTT—10
ACE—33-63
AJAX—46
ALL AMERICAN—1-33
ALLEN—33-53
ALTER—3
AMERICAN—3-6-63
AMERICAN BEAUTY—33-63
ANDERSON—22
APPERSON—5-48

BAKER ELECTRIC—28
BARLEY—55
BAY STATE—6-63
BEGGS—63
BELL—3-33
BIDDLE—37
BIMEL—3-33
BIRCH—33-63
BREWSTER—7
BRIGGS-DETROITER—33
BRISCOE—17-37-66
BULL TRACTOR—3
BUSH—33-63

CASE—11-33-48
CHALMERS—11-33-48
CHANDLER—27
CLEVELAND—27
CLIMBER—33-63
COLE—12-48-62
COLUMBIA—13-55
COMET—6-10-36-63
COMMONWEALTH—33-64
COURIER—22
CRANE SIMPLEX—8
CROW ELKHART—6-10-14-33-63-64

DANIELS—33
DAVIS—48-64
DEARBORN—63
DETAMBLE—3
DETROITER—33
DIANA—42-43-48
DIXIE FLYER—33
DORRIS—10-63
DORT—16-33-37
DURANT—44

E. M. F.—61
EARL—15-30-48
ELCAR—2
ELGIN—9-10-18-33-64
ELKHART—14-63
EMPIRE—14
ENGER—3
ERSKINE—61

FALCON—69
FLANDERS—61
FLINT—19-48
FOX—33
FULTON—33-63

GARY TRUCK—20
GRANT—24-33
GRAY—3-10-25-28-63

H. C. S.—3-48
HACKETT—10
HALLADAY—10-55
HANDLEY KNIGHT—31-45-55
HATFIELD—16-33-63
HAYNES—26-48
HERRESHOFF—3
HOLLIER—33-63
HOLMES—63
HUDFORD TRUCK UNIT—33

INTER-STATE—10-29-63-64
IRVING—63

JACKSON—6-30-55
JEFFERY—46
JONES—63
JORDAN—37

KELLY-SPRINGFIELD—22
KELSEY—63
KING—10-37-48-63
KISSEL—8-60
KLINE—33-63
KNOX—32-33

L. P. C.—3
LAMBERT—3
LANCASTER—7
LEXINGTON—4-37-48-62
LIBERTY—34
LOCOMOBILE—21-35-48
LORRAINE—63
LOZIER—51

MAIBOHM—33
MARION—3
MARION-HANDLEY—45
MARMON—22
MAXWELL—11-48
McFARLAN—38-48
MERCER—39-48
METZ—6-40-63
MILBURN—28
MITCHELL—10-41-48-63
MOLINE—31-60
MOLINE-KNIGHT—10-31

MONITOR—3
MONROE—3-10-63
MOON—42-43-48
MURRAY—63

NATIONAL—10-37-47-48-64

OLYMPIAN—10-63
OWEN-MAGNETIC—37-48

PAN-AMERICAN—3-33
PARRY—3
PATERSON—50
PATHFINDER—3-63
PEERLESS—59
PILOT—36-63
PREMIER—3-48-66
PULLMAN—3-33

R & V KNIGHT—31-63
RAUCH & LANG—28-37
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RICKENBACKER—48-54
RIKER—33
ROLLIN—56
ROSS—63
RUGGLES—22

SAMSON—57
SAXON—33-58
SCRIPPS BOOTH—52
SHERIDAN—49
SIGNAL—33
SIMPLEX—8
SINGER—63
SKELTON—6-10
STANDARD—23-33-62-63
STANLEY—15
STEARNS-KNIGHT—37-48-59
STEPHENS—60
STEVENS-DURYEA—37

TEMPLAR—37-48-63
TEXAN—63

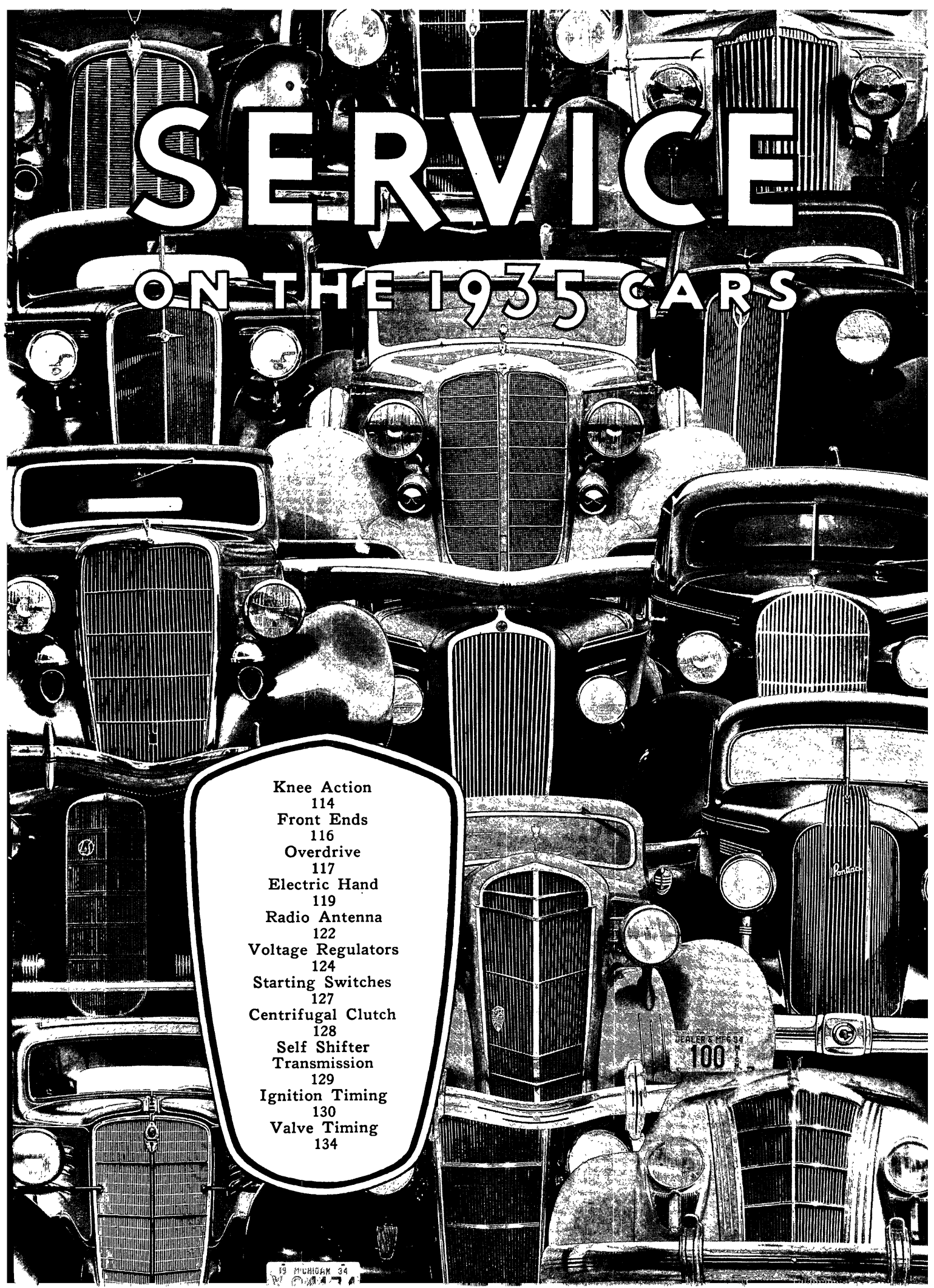
UNION TRUCK—63

VAUGHN—63
VELIE—65

WAVERLY—28
WESTCOTT—48-67
WILLS ST. CLAIRE—37-48-62-63-68
WINDSOR—42-43
WING—63
WINTON—48-70

NAME OF PARTS COMPANY

1—All American Truck Service Co.
Detroit, Mich.
2—Allied Products Mfg. Co.
700 Beardsley Ave., Elkhart, Ind.
3—American Motor Parts Co.
Washington St., Indianapolis, Ind.
4—Ansted Engineering Co.
Kokomo, Ind.
5—Apperson Automobile Co.
Kokomo, Ind.
6—Autoparts Co.
705 Beacon St., Boston, Mass.
7—Brewster & Co.
Long Island City, N. Y.
8—C and S Service, Inc.
9-17 43rd Ave.
Long Island City, N. Y.
9—J. I. Case Co.
Racine, Wis.
10—Century Parts Co.
1724 S. 18th St., St. Louis, Mo.
11—Chrysler Sales Corp.
Detroit, Mich.
12—Cole Motors Co.
Kokomo, Ind.
13—Columbia Motors Co.
Flint, Mich.
14—Crow Elkhart Motor Co.
Flint, Mich.
15—Cruban Machine & Steel Corp.
56 Varick St., New York, N. Y.
16—Dort Motors Co.
Flint, Mich.
17—Earl Motors Mfg. Service Co.
Flint, Mich.
18—Elgin Motor Car Service Corp.
Flint, Mich.
19—Flint Motor Service Co.
Flint, Mich.
20—Gary Motor Co.
Flint, Mich.
21—General Parts Corp.
Bridgeport, Conn.
22—General Parts Corp.
Flint, Mich.
23—General Parts Corp.
Detroit, Mich.
24—Grant Motor Service Co.
Flint, Mich.
25—Gray Engineering Co.
Flint, Mich.
26—Haynes Automobile Co.
Kokomo, Ind.
27—Hupp Motor Car Co.
Cleveland, Ohio
28—Indiana Battery Service Co.
1136 N. Meridan St.
Indianapolis, Ind.
29—Interstate Motor Co.
Flint, Mich.
30—Jackson Auto Service Co.
Detroit, Mich.
31—Knight Auto Parts Co.
East Moline, Ill.
32—Knox Motor Associates
Springfield, Mass.
33—Levene Motor Co.
2200 Diamond St., Philadelphia, Pa.
34—Liberty Motor Car Co.
Flint, Mich.
35—Locomobile Service Co.
Philadelphia, Pa.
36—M & M Motor Co.
Chicago Heights, Ill.
37—Magnetic Auto Parts, Inc.
20 E. 135th St., New York, N. Y.
38—McFarlan Motor Corp.
Kokomo, Ind.
39—Mercer Motor Car Co.
Trenton, N. J.
40—Metz Friction Drive Co.
Detroit, Mich.
41—Mitchell Motor Car Co.
Flint, Mich.
42—Moon Motor Car Service Co.
Kokomo, Ind.
43—Moon-Diana Service, Inc.
102 West End Ave., New York, N. Y.
44—Moorman Motor Car Co.
523 Warren St., Dayton, Ohio
45—Mutual Motors Co.
North Tonawanda, N. Y.
46—Nash Motors Co.
Kenosha, Wisc.
47—National Motor Service Co.
Kokomo, Ind.
48—N. Y. Bearings & Parts Co.
55 Amsterdam Ave., New York, N. Y.
49—Olds Motor Works,
Lansing, Mich.
50—Paterson Motor Car Co.
Flint, Mich.
51—Philadelphia Machine Works
Philadelphia, Pa.
52—Pontiac Motor Car Co.
Pontiac, Mich.
53—Puritan Parts Co.
Detroit, Mich.
54—Rickenbacker Motor Co.
Flint, Mich.
55—Roamer Motors, Inc.
Kalamazoo, Mich.
56—Rollin Motors Service Co.
E. 193rd St. & Euclid Ave.
Cleveland, Ohio
57—Samson Tractor Co.
Janesville, Wisc.
58—Saxon Motor Car Corp.
Box 132, Roseville, Mich.
59—Stearns Knight Corp.
Cleveland, Ohio
60—Stephens Service Co.
Freeport, Ill.
61—Studebaker Corp.
South Bend, Ind.
62—United Auto Specialists,
801 Washington St., Los Angeles, Cal.
63—United Motive Parts Co.
320 W. 53rd St., New York, N. Y.
64—United Parts Co.
121 N. High St., Muncie, Ind.
65—Velie Auto Parts & Service Co.
Moline, Ill.
66—Ad. Weske,
830 38th Ave., San Francisco, Cal.
67—Westcott Motor Car Co.
Kokomo, Ind.
68—Wills Sainte Claire Co.
Flint, Mich.
69—Willys Overland Co.
Toledo, Ohio
70—Winton Service, Inc.
Kokomo, Ind.



SERVICE ON THE 1935 CARS

Knee Action
114
Front Ends
116
Overdrive
117
Electric Hand
119
Radio Antenna
122
Voltage Regulators
124
Starting Switches
127
Centrifugal Clutch
128
Self Shifter Transmission
129
Ignition Timing
130
Valve Timing
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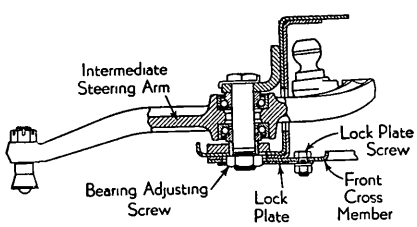
SERVICE on the 1935 cars . . . KNEE-ACTION

THREE NEW TYPES of independently sprung front ends, different from those described in the April 1934 issue of MoToR are found on the following 1935 cars: Buick 40, Packard 120 and Studebaker. Buick 40 and Packard 120 cars use coil springs while the Studebaker cars have a transverse leaf spring.

Buick 40—This front suspension is the same type as on other Buick cars but the construction of some of the component parts has been changed so that service operations are different. The steering knuckle support is bolted to a caster adjuster. The kingpin is clamped in the caster adjuster and turns in bronze bushings in the forked ends of the steering knuckle, bolted to the brake backing plate.

All checks for toe-in, caster and camber should be made at curb weight and with the distance from the top of the lower rubber bumper to the top surface of the lower control arm 4 9/16". On the coupes the distance at the rear end between the frame and the top of the spring clip should be 6 1/4" when the spare tire is mounted at the rear and 6 5/8" when a spare tire is mounted in each fenderwell. On sedans these dimensions should be 6 7/8" and 7 1/4" respectively. The dimensions on each side should be the same within 1/64". If the dimensions are less than this, insert wood blocks of the correct dimensions between the frame and rear axle. If the dimensions are greater than specified, add weight to the car to bring the frame down to its correct level.

After the tires have been inflated to their correct pressure and the wheels and wheel bearings have been checked, remove any looseness in the steering connecting rods. See that the plugs in the ends of the rods are adjusted to give proper tension on the springs and



make sure that the ball studs are tight in the steering and pitman arms.

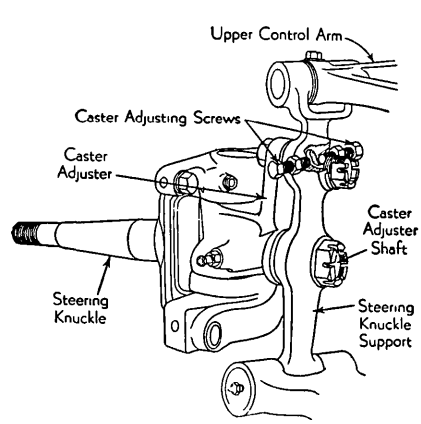
The steering connecting rod ball seats are hardened steel cups. One spring is provided at each end to take up wear. To make an adjustment, tighten the plug in each end until it is solid and then back it off 1/4 to 1/2 turn. When assembling the rod on the ball stud, be sure that the ball seat, spring and spring stop are assembled in their proper positions in each end and also that the notches in the ball seats are in line with the ball neck so that they will not turn when making an adjustment. If this is not done, the edge of the ball can be tightened up against the neck of the ball stud, causing them to bind.

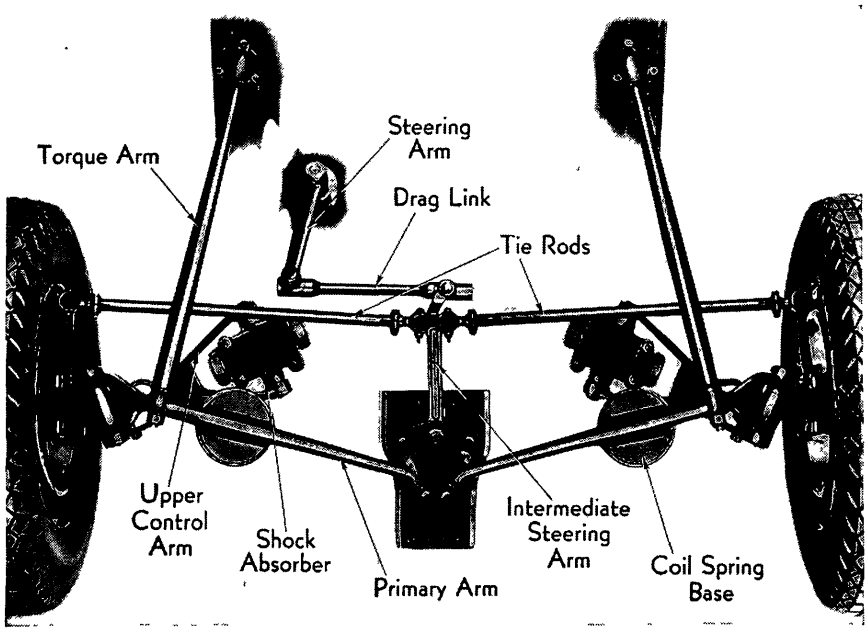
TOE-IN—When toe-in is measured at the centers of the tread of the tires the dimension at the front should be 5/32" to 7/32" less that at the rear. If checked at the side of the tires, it should be 1/8" to 3/16" less at the front than at the rear.

The intermediate steering arm must be on the centerline of the car, midway between the lower support arm bolts, when the front wheels are in their straight ahead position and set to the proper toe-in. If the arm is not in this position, adjust the tie rods by lengthening one and shortening the other until the arm is centered. When this change is necessary, the toe-in should be rechecked and the steering wheel relocated. The marked spoke of the steering wheel should be straight down when the wheels are in their straight ahead position. The steering wheel hub and steering gear tube are serrated and one serration equals a movement of 1 1/2" measured at the steering wheel rim. If the marked spoke is more than 3/4" to one side of the center the steering wheel should be shifted one serration, which will bring it less than 3/4" off the center on the other side.

To adjust the tie rod, loosen the clamp bolts at each end and turn only the tube. With the wrench hanging down from the rod, turn toward the front on both rods to reduce the toe-in. Turn the wrench toward the rear on both rods to increase the toe-in. Both rods should be turned the same amount to maintain the proper relation between the front wheels and intermediate steering arm. The following table can be used for making adjustments. The number of turns listed should be made on each rod.

1/8	turn changes toe-in	5/64"
1/4	turn changes toe-in	5/32"
3/8	turn changes toe-in	15/64"
1/2	turn changes toe-in	5/16"





PACKARD-120

CASTER—Caster is adjusted by swinging the caster adjuster in the knuckle support as the kingpin is anchored in the caster adjuster. The caster adjuster is held to the knuckle support by two bolts, one at the center on which it pivots and one above it which passes through a slot permitting a travel of 6 degrees.

To make an adjustment, jack up the front wheels until the tires just clear the floor. Loosen the castellated nuts on the anchor adjuster bolts one turn. Loosen the lock nuts on the front and rear bolts at the adjuster bolt. The caster should be 2¾ degrees to 3¼ degrees measured at the bosses on the steering knuckle flanges. Each side should be the same within ⅛ degree. To increase the caster angle, turn the rear adjusting screw counterclockwise, looking at the head of the screw, and turn the front adjusting screw clockwise, looking at the head of the screw. This forces the upper caster adjuster bolt toward the rear of the slot in the knuckle support, increasing the caster angle. To reduce the caster angle, turn the screws in the opposite direction. Turning the screws a quarter revolution changes the caster angle ¼ degree. The adjusting screws must be tight against the caster adjuster bolt when the adjustment is complete.

CAMBER—When the curb weight dimensions listed above are correct the camber should measure ½ to 1¼ degrees or 9/64 to 11/32 inches measured at the wheel rim. No camber adjustment is provided as it is constantly changing due to spring action.

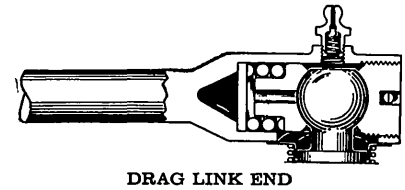
INTERMEDIATE STEERING ARM—The intermediate steering arm is mounted on two ball bearings and is supported in a bracket fastened to the front cross member. Play in the bearings can be adjusted by removing the adjusting nut lock plate at the bottom of the bracket and turning the adjusting nut until a pre-load of 1 to 2 pounds, measured with a spring scale at the end of the connecting rod ball stud, is obtained. This load is measured with the steering connecting and tie rod disconnected from the arm. At no times should the load exceed 2 pounds. The steering connecting rod ball and tie rod ball locations should check to the dimensions shown. These dimensions are taken from the lower surface of the front cross member. The same type Delco-Lovejoy shock absorber is used as is used on the other Buick cars.

Packard 120—The lower control arm on this car consists of a primary arm and a torque arm mounted on the frame at widely separated points. The inner end of the primary arm is mounted on the frame front cross member by a rubber bearing. It is connected to the lower end of the steering knuckle support by a roller bearing to carry vertical loads and also by a ball thrust bearing for braking and driving loads. The torque arm is bolted near the outer end of the primary arm and attached to the frame just forward of the dash in a spherical rubber bearing. The inner ends of the upper control arm are attached to the camshaft of a Delco-Lovejoy double acting, hydraulic shock absorber. Its outer end is connected to the upper end of the steering knuckle support by a rubber bearing.

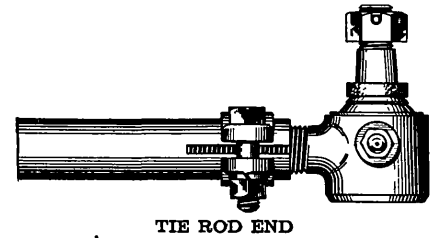
All driving and braking loads are taken by the lower control arm so that the torque arm is an important member in maintaining the correct wheel alignment. The wide separation between the support bearings of the lower control arms also assists in maintaining alignment. The upper and lower control arms are also widely separated to maintain alignment and because of this separation there is no means for adjusting the camber angle.

TOE-IN—To adjust the wheels for toe-in, set them in their straight ahead position and loosen the clamps at the ends of the tie rods. The toe-in should be between 0 and ⅛" measured at the wheel rims. Turn each tie rod an equal amount so that both will remain the same length. After the job has been completed and the clamps tightened, check the length of the two rods and adjust them if they are unequal.

STEERING LINKAGE—With the steering gear in its mid-position, which can be determined by counting the number of turns required for complete travel and then turning the wheel back one half of the total number of turns, the steering lever should be installed so that it is pointing nearly straight ahead. It is impossible to place the lever on the steering gear cross shaft at more than four positions and only one of them will allow the car to be



DRAG LINK END



TIE ROD END

controlled. The wheels should be set in their straight ahead position and the intermediate steering arm should be pointing directly backward. The drag link may then be connected between the steering arm and the intermediate steering arm. If the ball joints at the ends of the drag link require adjustment, they should first be removed, cleaned and lubricated. After assembling the parts in their proper order, turn up the plugs at the ends with a screwdriver until the springs are compressed solid and then turn the plugs back at least one half turn to line up the cotter pin holes.

The intermediate steering arm is mounted on ball bearings at the center of the front cross member and is packed in grease with sufficient lubrication for long periods.

When the front wheels are in their straight ahead position one of the spokes of the steering wheel should point directly down.

Studebaker—A transverse leaf spring supports the weight of the car, each end being attached to the lower part of the steering knuckle support. The upper end of the steering knuckle sup-

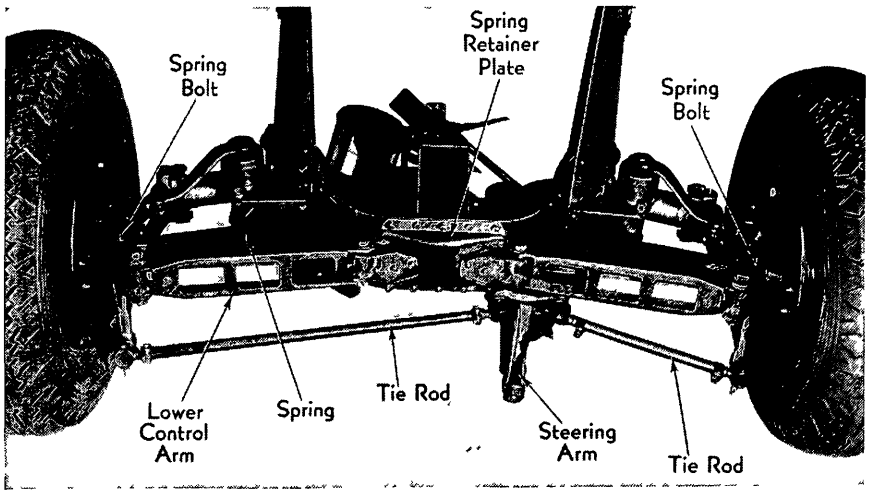
port is secured to the upper control arm with two needle bearings. The upper control arm is mounted to the frame of the car in four rubber bushings. The lower control arm, mounted just below the transverse spring between the center of the frame and the bottom of the steering knuckle support, serves as a support for a jack or lift when raising the front end of the car and also supports the car in case of spring breakage. The lower control arm is rubber bushed at each end. Spring eyes have threaded bolts. A two-way Houdaille hydraulic shock absorber is mounted on the frame and attached to the steering knuckle support by a separate arm for more convenient servicing. Braking torque is taken almost entirely by the upper control arms which are heavy, large diameter steel tubing welded to forged ends.

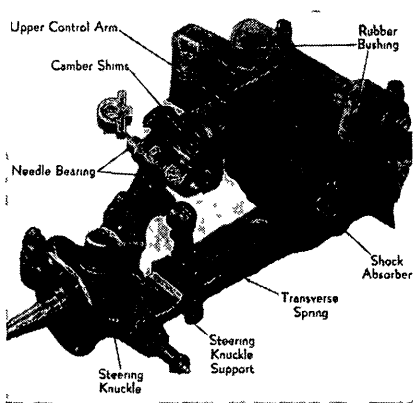
The tie rods are linked directly to a short forked steering arm attached to the steering gear cross shaft. This construction eliminates the drag link and an intermediate steering arm assembly.

CAMBER—The camber should be checked with the car at curb weight, with the car on a level floor and the tires inflated properly. Camber is adjusted by shims between the upper control arm and the upper control arm needle bearing cages. Adding shims increase the camber angle and removing shims decreases it. The shims are 1/32" thick and one of them changes the chamber 1/4 degree. Not more than six shims should be used.

TOE-IN—The toe-in is adjusted by changing the length of the longer tie rod. Loosen the clamps at each end of the rod and turn the rod until the toe-in is correct.

CASTER—The caster angle is built into the car by the position of the spring in its channel in the frame and it is therefore not adjustable. The car should be at curb weight and on a level floor when the angle is measured.





The main spring can be checked by stretching a string between the two spring bolt centers. If the string is not more than 3/8" above the top of the spring retainer plate, the spring is still serviceable. If the measurement is greater than 3/8" the spring has excessive sag and should be replaced. To replace a spring remove the cotter pins, nuts and washers from the outer ends of the lower control arms and drive the bolts out with a brass punch. Remove the spring bolts and the bolts holding the spring retainer plate to the frame. Remove the spring retainer plate and the spring will drop down out of place. When installing a new spring, fill the spring retainer plate with fibrous grease and be sure that the grease retainer at each side of the plate is in place. Cover the inner surface of the spring channel with fibrous grease. Coat the lower control arm rubber bushings with soft soap before installing the bolts. Then reverse the procedure described for removing the spring.

A felt washer in the steering knuckle support over the kingpin is slotted from its outer edge to the hole in the center. This washer must always be installed with the slot in line with the oil hole in the steering knuckle support so that the felt wick can extend into the slot. For proper lubrication of the kingpin the oil wick must contact the felt washer and the felt washer must contact the top of the kingpin.

FRONT ENDS

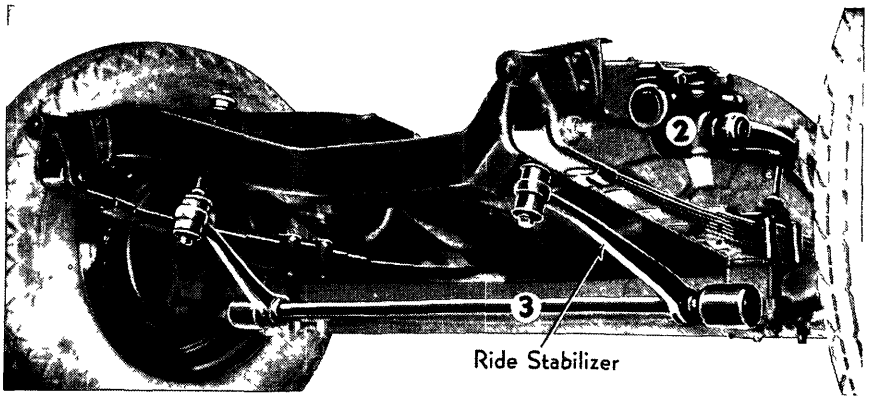
Dodge and Plymouth—The front end of each of these cars now consists of a tubular steel axle with semi-elliptic tapered leaf springs, Delco-Lovejoy double acting hydraulic shock absorbers and a ride stabilizer. The steering gear is mounted well forward so that the drag link runs parallel to the front axle and is now connected to the steering arm at the right wheel instead of the left wheel.

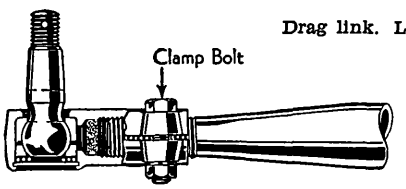
Adjustments for caster and toe-in are conventional. The camber angle is not adjustable but the front axle center may be bent cold to correct the camber angle. If more than 1/2 degree adjustment is required, the tubular center must be replaced. Under no circumstances should the tubular center be heated.

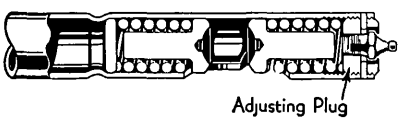
If the pitman arm is disconnected from the steering gear cross shaft the steering gear should be set in its mid-position before connecting it. In this position the spoke of the steering wheel which has the trade-mark on its under side should be pointing directly up.

With the steering wheel in this position install the pitman arm on the

serrations so that it points forward and slightly away from the center of the car. The front wheels should be in their straight ahead position. Now install the drag link without moving the front wheels or the steering wheel. If the length of the drag link has to be adjusted, loosen the clamp bolt at the steering arm end and turn the complete end assembly. The ball sockets at the steering gear end are adjusted by a slotted plug at the end of the rod. When an adjustment is necessary the parts should be removed, cleaned and lubricated. The drag link springs should be checked and any that measure less than 1⅝" in free length should be replaced. After assembling the parts in their proper positions turn the plug at the end of the rod up until the springs are compressed solid and then back it off four full turns.







Drag link. Left, steering arm end Below, steering gear end

OVERDRIVE

Chrysler, Nash, Studebaker—The overdrive is mounted at the rear of the transmission in a separate housing and automatically reduces the ratio of engine speed to car speed, without the manual shifting of gears, when traveling over 40 miles per hour. With the overdrive in operation the engine speed is 29½ per cent slower than the propeller shaft speed while in direct drive the engine speed and propeller shaft speed are the same.

The overdrive consists of the following major assemblies: A vibration damper, mounted at the front to cushion and quiet the drive; a stationary gear, about which five pinions revolve on needle bearings; an automatic clutch engagement unit, which cuts the overdrive in and out of operation, and a free-wheel unit, at the rear of the housing. Automatic engagement of the overdrive is controlled by engine speed but can only take place when the free-wheel unit is in operation.

A button on the dash controls the overdrive. When the button is pulled out to its rear stop the clutch shaft is shifted to the rear and its teeth engage with the internal teeth of the mainshaft and the free-wheel cam, making a solid unit and giving a conventional drive.

When the button is pushed in, the clutch shaft is shifted forward so that its teeth engage with the free-wheel cam and the overdrive clutch core (as shown in the illustration, page 64). In this position the free-wheel unit is in operation whenever the car speed exceeds the engine speed, below 40 miles per hour. The overdrive goes into action at speeds above 40 to 45 miles per hour if the accelerator pedal is released for about 1½ seconds.

When shifting the control button to lock up or cut-in the free-wheel unit and the overdrive it is necessary to have the engine driving the car. At the same time, the clutch pedal must be depressed while pulling out the dash control button. The overdrive must not be locked out at speeds above 40 miles per hour. It is not necessary to lock out the free-wheel unit at speeds above 40 miles per hour as it is automatically cutout by overdrive operation.

When traveling at speeds lower than the overdrive cut-in speed with the overdrive and free-wheel unit unlocked, the drive is through the clutch shaft teeth, the free-wheel cam and the free-wheel rollers to the mainshaft (shown by the dotted lines) giving direct drive. When the accelerator is released and the car speed exceeds the engine speed the car free-wheels through the free-wheel rollers.

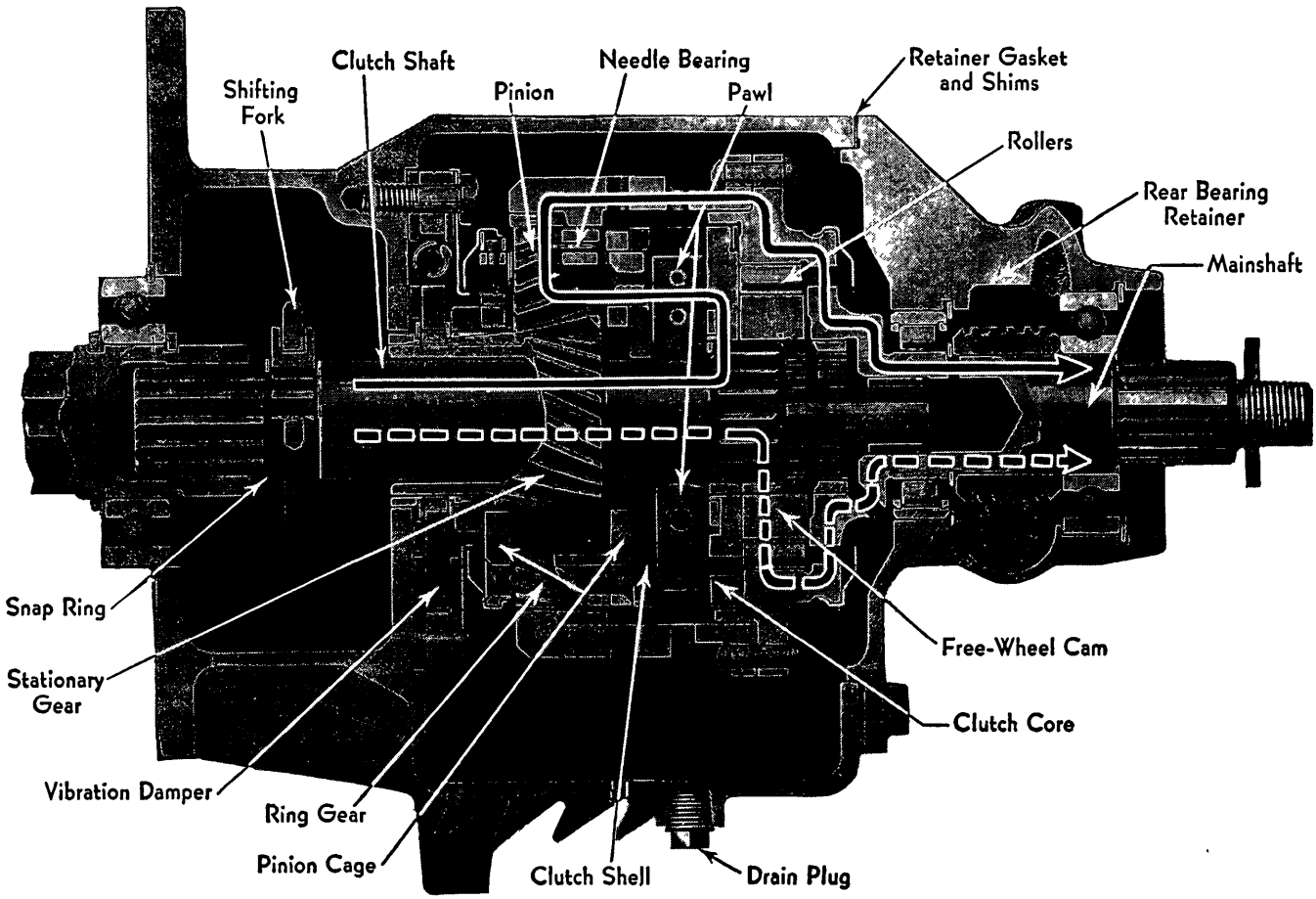
When the car is in operation, the clutch core and pawls, rotating at the same speed as the clutch shaft, are revolving faster than the clutch shell. When the car speed exceeds the overdrive cut-in speed, centrifugal force acting on the pawls overcomes the tension on the pawl springs and causes the pawls to fly out into engagement with the slots in the clutch shell. However, due to the design of the pawls, engagement cannot occur as long as the pawls are rotating at a higher speed than the clutch shell. If the accelerator is released, the pawls will lock the clutch core to the clutch shell at the moment the engine speed drops sufficiently so that the pawls are turning at the same relative speed as the clutch shell. This requires about 1½ seconds. The overdrive is now in operation.

Power is now transmitted to the clutch shaft, to the pawls, to the clutch shell and then to the planetary gearset. From this point the power is transmitted by the pinions to the ring gear internal teeth and to the mainshaft (shown by the solid line). The free-wheel unit is not in operation when in overdrive.

It is possible to accelerate from low car speeds up to maximum speed in direct drive, without the overdrive operating due to the difference in rotating speeds of the clutch pawls and clutch shell. The overdrive clutch will not engage unless the throttle is completely closed to permit both to attain the same speed, after the predetermined cut-in speed has been reached.

LUBRICATION—Refined oils of the correct grade that are not corrosive and which do not contain solid compounds or heavy compounded soaps must be used. It is important that the proper lubricant level be maintained. The lubricant level should be checked each time the crankcase oil is drained by removing the filler plugs on the side of the transmission case and overdrive housing. To refill the units, first fill the transmission to the level of the filler hole. Then fill the overdrive unit to the level of its filler hole. Addi-

Service on the 1935 Cars . . . OVERDRIVE



tional lubricant inserted in the overdrive housing will cause lubricant to flow out of the transmission filler hole. Both units should only be filled to the level of the filler holes. The overdrive housing should be inspected occasionally for faulty oil seals and leaks which might cause damage due to lack of lubrication.

ADJUSTMENTS—If the overdrive is lubricated with the recommended type of lubricant, it will require very little service attention. There is only one adjustment for end play and this is controlled by shims and a paper gasket between the rear bearing retainer and the overdrive housing. Since the end play is difficult to measure, due to the design of the housing, the same number of shims and the same thickness paper gasket that came with the particular unit must be used in reassembling that unit in every instance. All parts are held to very close limits and replacement of one or two parts will not affect end play to any appreciable amount.

To disassemble the overdrive unit, remove it from the car by removing the floorboard and disconnecting the controls. Next drop the propeller shaft and drain off the lubricant from the transmission and overdrive housings. Remove the bolts which fasten the overdrive to the transmission case and install two pilot studs to keep the overdrive in alignment when it is being removed. This prevents the weight of the overdrive being imposed on the clutch shaft and the lock-out pin which otherwise would become bent or damaged.

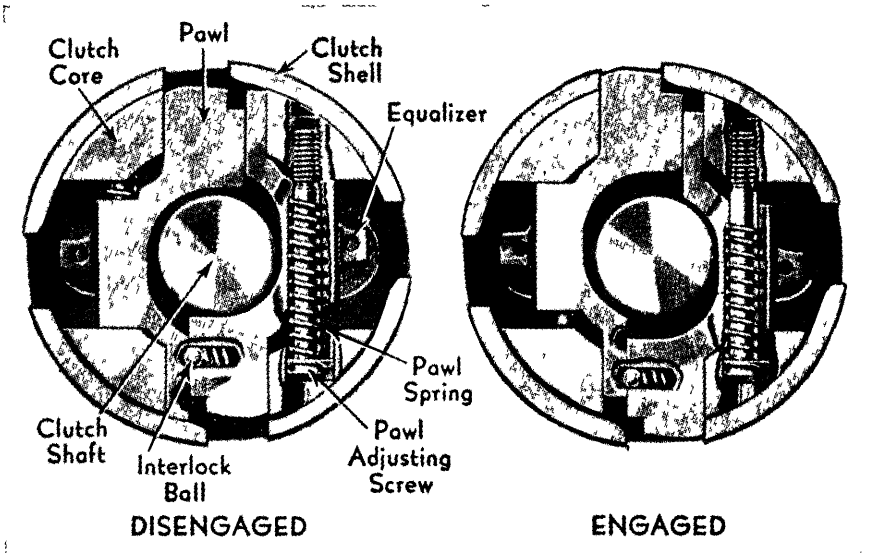
Remove the bolts which hold the rear bearing retainer in place. The free-wheel unit and ring gear can be removed as an assembly with the bearing retainer. Now remove the snap ring which holds the clutch shaft shifting collar in place. The clutch shaft can then be pulled out through the rear end. The pinion cage assembly, clutch core and clutch shell can be pulled out through the rear of the overdrive housing. The stationary gear and vibration damper can be removed by taking out the cap screws after the lips of the lockwashers have been turned down. When removing the vibration damper mark it and the overdrive housing with a punch as it must be installed in its original position so that the oil holes will line up and permit the lubricant to circulate from the transmission housing into the overdrive housing. Always use new lockwashers when installing the damper member. Also be sure that the same shims and gasket are used when installing the rear bearing retainer so that end play will not be upset.

The overdrive cut-in speed is set at the time of assembly and should remain unchanged. If, however, an adjustment should be necessary for some special reason the following operations should be performed. Remove the overdrive housing drain plug which will permit access to the pawl adjusting screws. With the rear wheels jacked up, rotate the propeller shaft until one of the holes in the clutch shell line up with the drain plug hole. Place the transmission in high gear and rotate the propeller shaft again until one of the adjusting screws and holes line up with the drain plug hole. To increase the cut-in speed, turn the screw in, clockwise. To reduce the cut-in speed turn the screw out, counterclockwise. Two full turns will change the cut-in speed approximately 6 miles per hour. The adjusting screws must be adjusted in at least half turns due to the design of the lockwasher which engages in the slot of the adjusting screw head. After completing adjustments on one screw, rotate the propeller shaft three-quarters of a turn so the other adjusting screw will line up with the hole in ring gear and

the drain plug hole. Always adjust both screws an equal amount. An equalizer bar is provided so that the engagement of both clutch pawls will occur at exactly the same time.

Should the clutch be disassembled, the clutch pawl adjusting screws should be replaced in their original position. It is recommended that the distance from the top of each screw to the outer diameter of the clutch core be measured before the screws are removed. Then when reassembling, the screws may be set to this dimension. The number of turns may also be counted as a further check.

After assembling and when making a road test it must be remembered that the speed at which the unit cuts out when decelerating is 8 to 10 miles per hour lower than the cut-in speed of the unit.



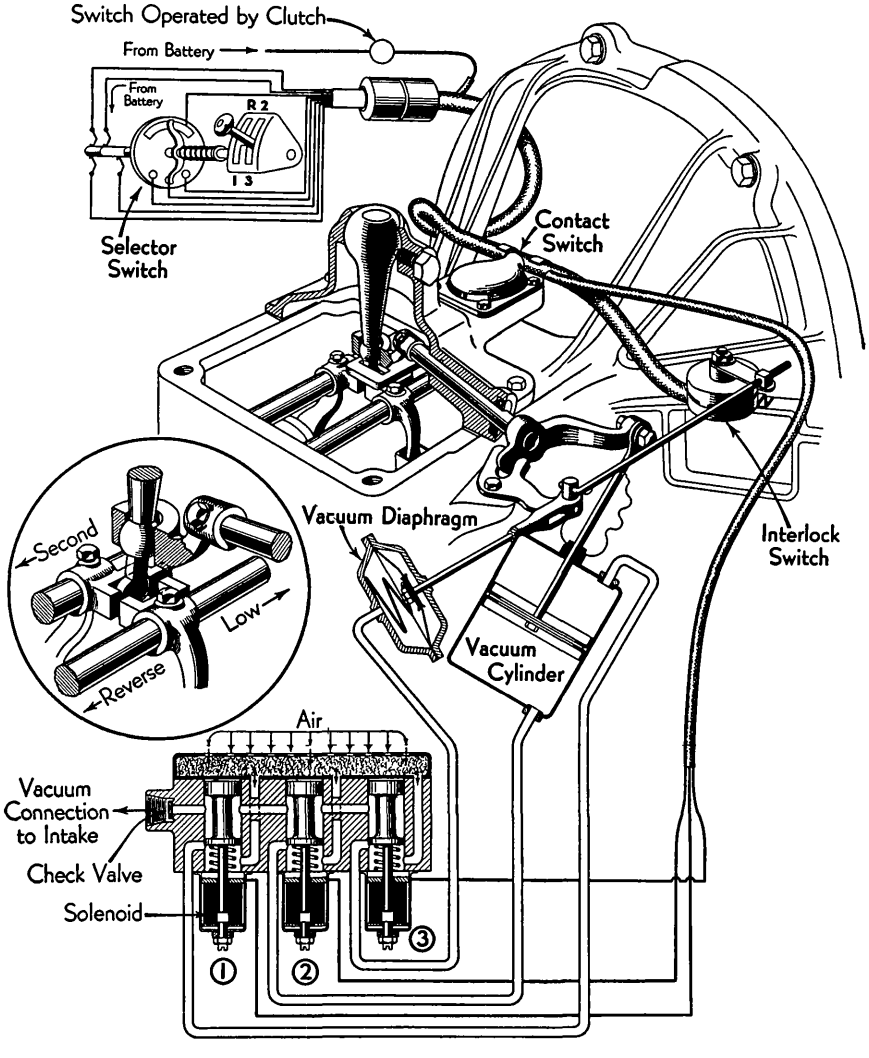
ELECTRIC HAND

THE conventional transmission has two shifter rails, each with a neutral, forward and rear position. The selection of the correct rail is obtained by moving the gear shifter lever sideways. After the correct rail is selected, engagement of the gear desired is obtained by moving the shifting lever forward or backward. These two operations are performed by the Electric Hand.

Power for shifting is supplied by two vacuum units, the vacuum diaphragm and the vacuum cylinder. Vacuum can act on one side of the diaphragm and on either side of the piston in the vacuum cylinder. The vacuum diaphragm, connected to the rail selector lever, moves the shift lever from one side to the other to engage either one of the shifter rails. The vacuum piston, attached to the selector crank, rotates the shifter cross shaft which swings the shifter lever to the front or rear to the desired gear.

When no vacuum is acting on the vacuum diaphragm, the spring behind it forces the diaphragm forward, holding the shift lever in engagement with the high and second gear rail. Application of vacuum moves the diaphragm to the rear, sliding the selector cross shaft to the right and swinging the shift lever to engage the low and reverse gear rail.

When vacuum acts on the rod end of the vacuum cylinder the piston moves toward the top of the cylinder which rotates the shifter cross shaft and causes the shift lever to engage either high or low gears. When vacuum acts on the mounted end of



the vacuum cylinder the piston moves toward the bottom of the cylinder, rotating the shifter cross shaft and causing the shift lever to engage reverse or second gears.

Three solenoid-operated valves control the vacuum units. The position of these valves is controlled by the selector switch at the steering wheel. When current flows to No. 1 solenoid, its valve is drawn down cutting off the atmospheric vent and connecting the intake manifold vacuum with the rod end of the vacuum cylinder piston. When No. 2 valve is drawn down it cuts off the atmospheric vent and connects the intake manifold vacuum with the mounted end of the vacuum cylinder piston. When No. 3 valve is drawn down the atmospheric vent is cut off and intake manifold vacuum is connected to the vacuum diaphragm, overcoming spring pressure. When current to a solenoid is broken, the valve spring pressure forces the valve upwards the atmospheric vent is opened, breaking the vacuum in the chamber it controls.

Three switches acting in co-operation, determine the sequence in which the solenoid valves move up and down to effect whatever gearshift the driver may make. The selector switch, at the steering wheel, closes a circuit which determines which rail is to be used and in what direction the shift is to be made on the rail. The interlock switch is linked to the vacuum diaphragm. The contact switch is operated by a sliding bar which is moved forwards and backwards by the transmission shift lever. The contact switch stops the rail when a gear has been fully engaged while the interlock switch supplies the correct contacts in the contact switch with current. When a shift involves both rails, as from low to second, the contact switch stops the first rail at neutral. Then the vacuum diaphragm swings the shift lever to the other rail and in so doing, rotates the interlock switch to a new set of contacts that supplies current to those contacts in the contact switch which are required to make the desired shift.

Due to the fact that the selector switch lever can be moved to any position after the engine has been stopped without a shift being made, it is impossible to tell by the position of the selector switch lever whether or not the car is in gear when the engine is dead. To prevent starting the engine with the car in gear, the circuit breaker on the clutch pedal requires the disengagement of the clutch before the starter switch circuit is complete.

Current for operation must pass through the ignition switch and then through the circuit breaker and finally through a cutout switch in the steering column assembly. From this it will be seen that the gearshift control will only operate when the ignition switch is on, the clutch disengaged, either manually or by a vacuum clutch control unit, and the cutout switch is in its on position. Since vacuum which controls the vacuum diaphragm and vacuum cylinder is supplied by the intake manifold, the engine must be running in order for the gearshift control to operate.

Solenoids No. 1 and No. 2 are connected to contacts in the contact switch and are energized when current from the battery is completed, through the sliding contacts, to the contact which controls the solenoid. Sliding contacts in the control switch are mounted on a bar that is moved forward and backward with the transmission shift lever. Moving the shift lever sideways does not change the position of the sliding contacts as their bar is slotted where the shift lever engages it.

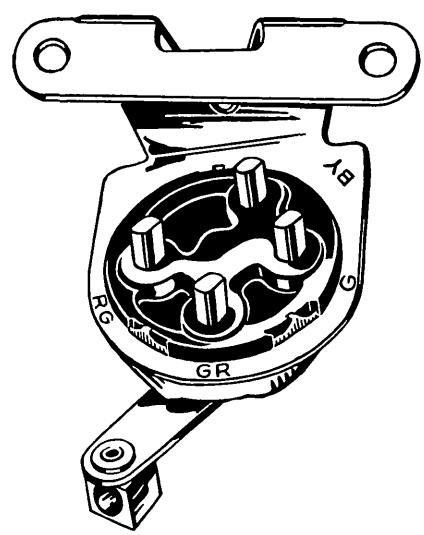
Solenoid No. 3 is connected direct to one of the contacts in the selector switch.

From this it will be seen that when the circuit is completed from the battery through the contact switch to the contact controlling No. 1 solenoid the shifting rail will be forward. When it is completed from the battery through the contact controlling No. 2 solenoid the shifting rail will be toward the rear. When the circuit between the selector switch contact and No. 3 solenoid is open the shifting lever will be pressed toward the high and second rail. When the circuit is from the contact in the selector switch to No. 3 solenoid is closed the shifting lever will be pressed toward low and reverse rail.

Adjustments . . . To adjust the cross shift stop screws, shift the transmission into high gear. Back off the front stop screw until it does not touch the stop. Now turn the stop screw in until it just touches the stop and then turn it an additional quarter turn before tightening the lock nut. After this adjustment is made a .004" feel should just pass between the outside face of the lug on the selector lever crank and the outside finger of the rail selector lever. Shift the transmission into low gear, using the power unit. Back off the rear stop screw until it does not touch the stop. Now turn the stop screw in until it just touches the stop and then turn it an additional quarter turn before tightening the lock nut. After this adjustment is made a .004" feeler gauge should just pass between the inner face of the lug on the selector crank lever and the inner finger of the rail selector lever.

To adjust the length of the vacuum diaphragm rod remove the clevis pin from the clevis and loosen the rod lock nut. With the rail selector lever pushed forward so that the front cross shift stop is against its stop, turn the clevis until the clevis pin hole is ¼" ahead of the hole in the lever when the diaphragm rod is in its extreme forward position. Tighten the rod lock nut. Push the rod back to align the holes and replace the clevis pin.

To adjust the interlock switch, shift the transmission into low gear and then into high gear. The pointer on the interlock switch should register with the line on the interlock switch cover. If it is not in alignment, make the following adjustment. Loosen the front stop and then turn the rear stop until alignment is obtained while the interlock switch is held against its rear stop. Now tighten the front stop. Shift the transmission into high gear and then into low gear. Recheck to see that the pointer registers with the line on the interlock cover. If an

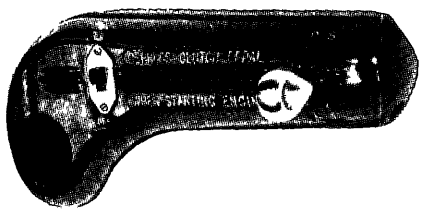


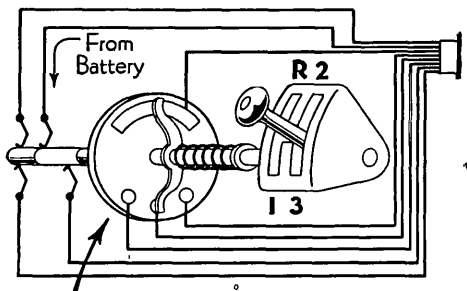
INTERLOCK SWITCH

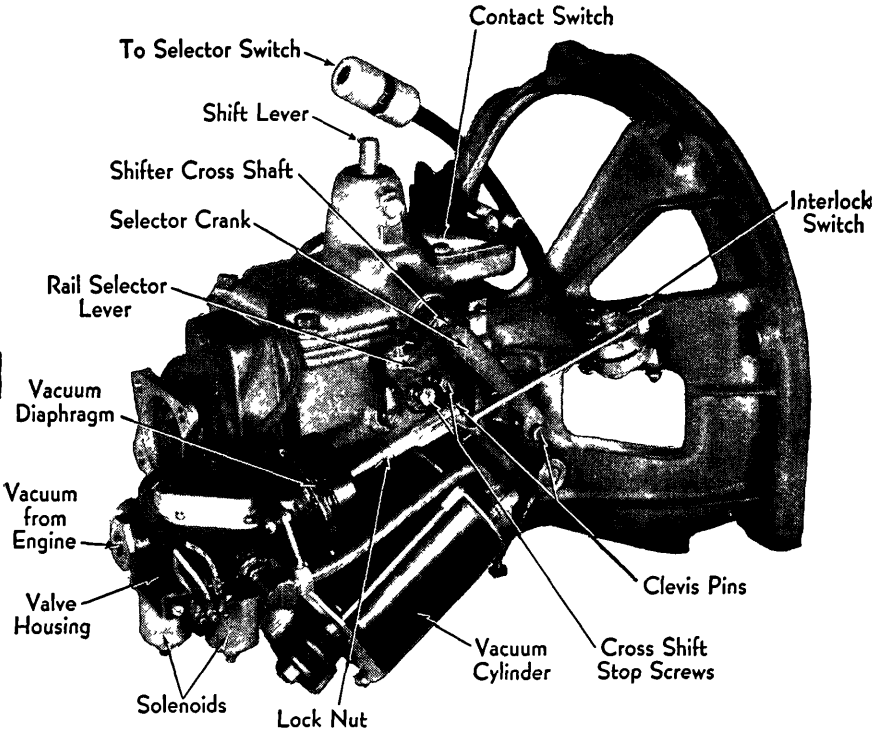
interlock switch without the markings shown above should be removed from the car, it should be marked as shown above to aid in reassembling the wires.

To adjust the vacuum cylinder rod, shift the transmission into high gear. Remove the cylinder rod clevis pin from the selector crank lever. Push the piston rod rubber guard back and loosen the piston rod lock nut. Turn the rod end until the clevis pin can be inserted with the piston rod pulled to its extreme forward position. Push the piston rod back and lengthen it four threads by turning the clevis. Tighten the lock nut and insert the clevis pin.

With the clutch fully engaged, the pointer on the clutch circuit breaker lever should be in line with the arrow on the top of the circuit breaker housing. To make an adjustment when







Above—Selector switch unit and wiring diagram of selector switch. Right—View showing location of units comprising Electric Hand

the car is equipped with an automatic clutch control unit, loosen the clamp bolt nut on the bracket mounted on the vacuum clutch rod and slide the clip until the pointer is in line with the arrow. Tighten the lock nut. When the car is not fitted with a vacuum clutch control unit, remove the cotter key from the circuit breaker lever. Loosen the lock nut on the operating rod and remove the rod end from the lever pin. Turn the rod end until it will slip on the pin with the pointer in line with the arrow on the housing. Insert the cotter pin and tighten the lock nut.

To test for the correct position of the circuit breaker, shift into low gear and allow the clutch pedal to come back slowly until the clutch just begins to drag. This is indicated by a slight vibration in the engine, but should not cause the car to move. While holding the clutch pedal in this position, move the selector to neutral. The transmission should shift to neutral. If it does not shift, move the clutch pedal down slightly. The amount the pedal has to be depressed to complete the shift is an indication of the amount the clutch circuit breaker arm pointer must be adjusted forward from the normal position mark.

If too much downward pedal movement is required to close the Electric Hand circuit, the shift will not be completed if an end to end condition of gears is encountered. This happens only when the car is standing still and is usually noticed only in attempting to shift into low or reverse. If insufficient pedal travel is necessary to close the Electric Hand circuit, the gears will grate as a gear is pre-selected, due to the clutch not being sufficiently disengaged when the shift is made.

The position of the circuit breaker lever is important. If the contact is made with too little clutch pedal movement, the clutch will still be engaged when the shift is made and if a gear has been pre-selected the shift will be made while the engine is driving the car. If the contact requires too much pedal movement, the shift will not be completed should the gears butt teeth. It is necessary to have a slight clutch drag before the circuit is broken to turn the gears and insure engagement. It may be necessary, therefore, to set the circuit breaker slightly ahead of the indicating arrow.

Service Operations . . . A preliminary service check should be made before attempting to make any repairs to the gear shift control mechanism, regardless of the nature of failure. Be sure that the cutout switch on the selector switch is on. Be sure that the transmission is free and can be moved into all its positions manually with the clutch pedal depressed just enough to close the circuit through the clutch circuit breaker. This can be checked by depressing the starter button. Adjust the interlock straps on the transmission, if necessary. If temperatures are encountered low enough to cause the recommended transmission lubricant to retard gear shifting excessively, replace three ounces of the lubricant with kerosene. Under no circumstances should the level of the lubricant be above the filler plug. This increases the effort necessary to shift gears and may cause leakage. Inspect the vacuum line and fittings for leaks. Check the wire connections on the interlock switch. Make certain that all clevis pins and cotter pins are in place. Inspect the junction block on the solenoid unit to see that all six wires are in place. Make certain that all soldered connections are intact in both portions of the steering column jack by removing the covers and twisting, with the jack assembled. Check wiring harness for breaks or damaged insulation.

To make a quick test for a short circuit, shift into all positions with the Electric Hand, while the instrument board lamp is lighted. Any appreciable dimming of the lamp indicates a short circuit in that position.

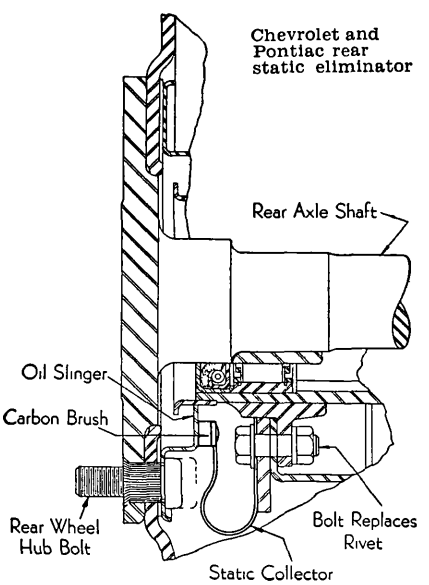
If the gears are shifted with the clutch engaged it is probably due to a short circuit in the clutch circuit breaker or the improper position of the circuit breaker arm. Make a check and if necessary adjust the clutch circuit breaker as already described. Turn on the ignition switch and depress the starter button. If the starter operates with the clutch fully engaged, replace the circuit breaker.

If the Electric Hand should fail to function set the pointer and arrow on the circuit breaker in line, turn on the ignition switch, depress the clutch pedal and press the starter button. If the starter functions, the circuit is closed through the circuit breaker. If the starter does not function, attach a grounded test lamp to the yellow wire terminal of the circuit breaker. No light indicates an open circuit from the ignition switch to the circuit breaker. A light indicates that the circuit breaker circuit is open and the circuit breaker should be replaced.

If these tests do not locate the trouble special test equipment supplied by the Hudson Motor Car Co. is required to make further tests.

RADIO ANTENNA

ON CARS with steel tops such as Chevrolet Master De Luxe 6, Hudson, Oldsmobile, Pontiac and Terraplane the radio antenna cannot be built into the roof and therefore must be installed under the car. This type of antenna has of course been used for some time in making installations on open cars and when the antenna was not built into the roof at the factory. The cars listed above now have brackets or holes to accommodate an antenna which the car manufacturers have found most effective on their cars and it is the position which they have found gives the best results.

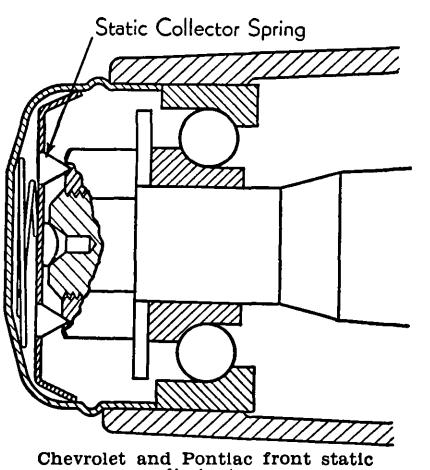


Chevrolet Master De Luxe 6 . . . This antenna is four steel, rustproof strips 1⅛" wide and .015" thick. Two strips are installed under each running board. They are set in from the edge of the running board, closer to the center of the car than the outer edges of the tires so that when parking besides a low curb, the antenna cannot overlap the top of the curb. The height of the antenna above the ground is greater than the clearance of the muffler. Clearance between the antenna and the running board and the rear support of the running board, beyond which it extends, is sufficient so that no insulated spaces are needed. The tension of the springs at the end of the strips prevents them from vibrating sufficiently to touch any part of the car.

When installing a radio set, the lead-in assembly is attached to the left antenna assembly which should be installed first. There is a knock-out plug in the floor board, just over the lighting switch, through which the lead-in should pass. The left and right hand front support brackets are attached to the bracket on the running board hanger. Attach the ground shield of the lead-in assembly under the bolt of the left front support bracket. Be sure that the paint is thoroughly removed from all areas which will be covered by this pigtail when it is bolted in place to insure a good ground connection. Mount the left antenna assembly and secure the lead-in assembly in place with the special cable slip provided. The rear support brackets are attached with the bolts which hold the fender to the running board. Mount the right antenna assembly, making sure that the rear support brackets are in their correct position. The cross lead assembly is an insulated and armoured connection which passes through openings in the frame. Its protective loom should be taped in place as shown in the illustration.

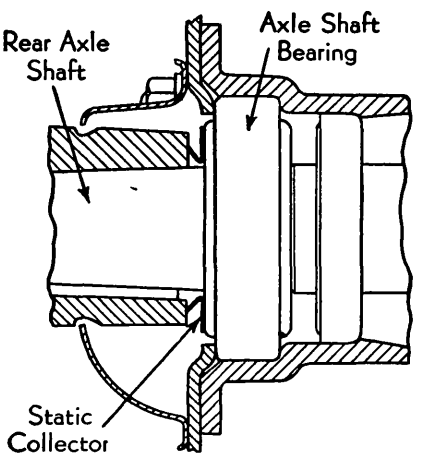
Wheel static eliminators are also designed for each wheel to eliminate static set up by the revolving of the tires.

To facilitate installation, the rear wheel static eliminators are installed at the factory. They consist of a flat U-shaped spring mounted on the brake shoe anchor plate by a bolt which replaces one of the rivets. A carbon brush at the outer end of this spring contacts the oil deflector at the wheel hub, assuring a good contact at all times between the wheel and the axle housing.

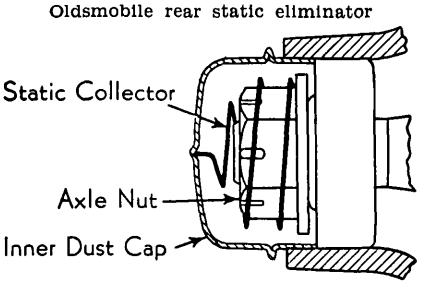


Chevrolet and Pontiac front static eliminator

Eliminators for the front wheels can easily be installed. To make an installation, remove the large and the small dust caps from the front wheels. Clean off all paint in the center hole of the axle spindle and, if necessary, remove the burrs from around this hole to prevent excessive wear of the contact button. Install the front wheel static eliminators and replace the dust caps.



Oldsmobile rear static eliminator



Oldsmobile front static eliminator

Oldsmobile . . . The antenna is a screen mounted under each running board. The brackets for attaching the screens to the running board have a rubber block in them for insulating the screen from the car. The lead-in shield is grounded under the left front antenna mounting bracket. The lead-in is attached to the left screen by a screw. The cross lead for connecting the two screens is also attached to the screens by a screw.

The rear wheel static eliminator is a spring washer on the axle shaft between the wheel bearing and the wheel

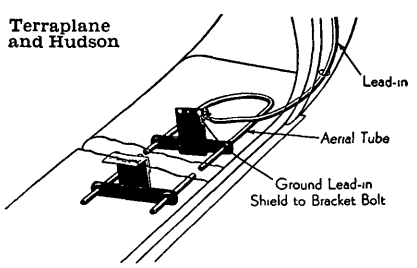
hub, giving a positive connection at all times between the wheel and the axle shaft housing.

The front wheel static eliminator is a spring mounted over the wheel spindle nut. The outer end is bent at right angles to the spring and contacts the inner dust cap. It can be installed by removing the large and the small dust caps.

Pontiac . . . The antenna is a metal screen mounted under each running board. The screens are attached to the running board brackets but are insulated from them by rubber blocks in each screen bracket. It is also attached to the center of the running board to prevent vibration.

The lead-in should be laced through three meshes of the screen before being clamped to it by the terminal. The lead-in shield is grounded to the left running board front bracket. The cross lead, which connects each screen, passes through holes in the frame and and is clipped to the floor board at the center. The cross lead should also be laced through three meshes of the antenna screen before being clamped to it.

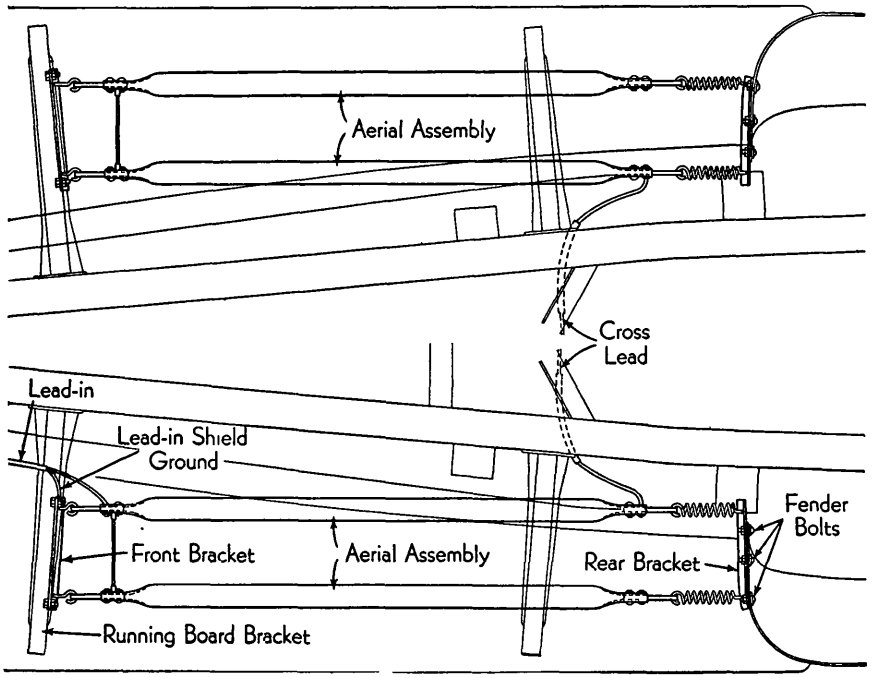
The front and rear wheel static eliminators are the same as described for the Chevrolet Master De Luxe 6.



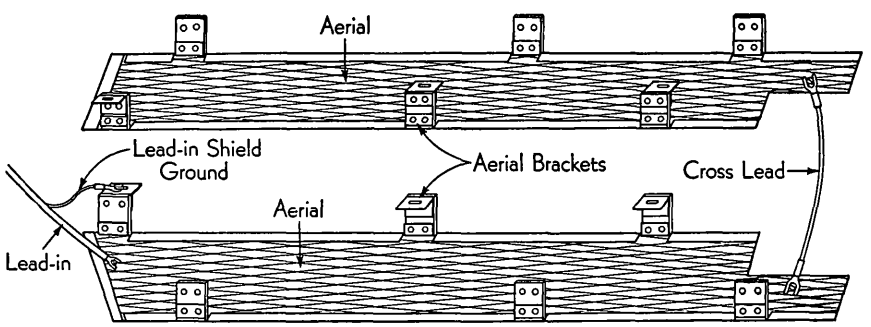
Hudson and Terraplane . . . The antenna is a U-shaped tube mounted to brackets under the left running board. The lead-in passes up through the body floor panel behind the kick pad directly to the radio. To make an installation, place the tubing on the floor on the left side of the car with the open ends of the tube toward the rear and the lead-in clip on the leg of the tube away from the car. Place the mounting bracket which has holes to match the holes in the front running board bracket on the tube with the bolt flange up and the lower hole on the side toward the car.

Place two rubber ferrules on each end of the tube, moving them forward far enough to put the rear bracket in place. Do not put the ferrules in the holes in the bracket.

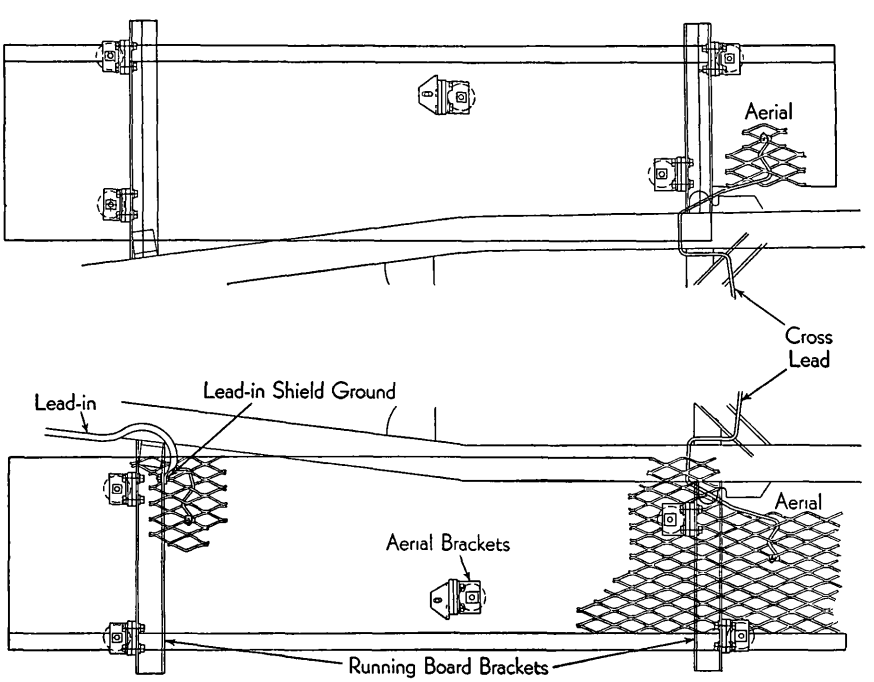
Attach the antenna brackets to the running board brackets with bolts and at the same time attach the antenna lead-in shield to the inner bolt holding the front bracket. Force the rubber ferrules into the holes in the brackets so that the extreme front end of the antenna tube is 7⅜ inches ahead of the front mounting bracket. The lead-in can now be clipped to the antenna tube.



CHEVROLET



OLDSMOBILE



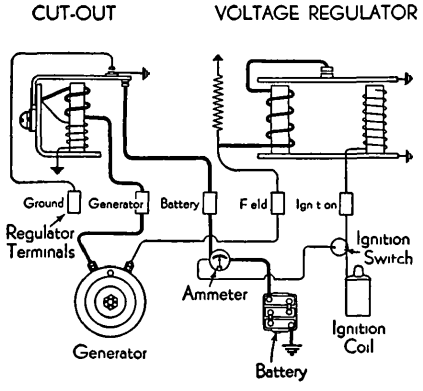
PONTIAC

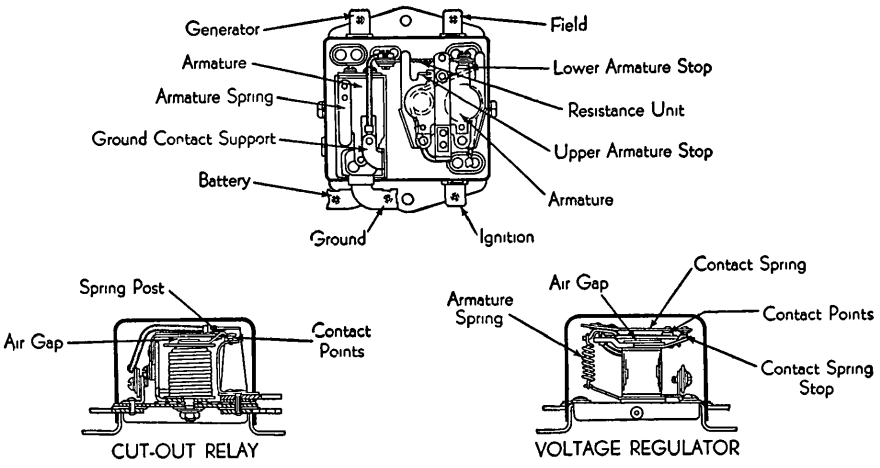
VOLTAGE REGULATORS

THE installation of additional electrical accessories has required the use of generators with larger capacities This increase in generating current has necessitated some manner of regulating the voltage within the system, especially with the third brush type of generator where the output curve tapers markedly at high speeds High voltages result in poor distributor contact life, decreased bulb life, damage to the battery due to overcharging and possible damage to the generator armature and its field windings

A high voltage condition in a car's electrical circuit exists mainly because of the high voltage obtained at the battery terminals under certain conditions of charge so that without other means of voltage control the voltage obtained at the battery is the governing factor Third brush generators have a characteristic of reducing the charging rate when the battery is low but as the battery approaches a fully charged condition, the increase in battery voltage increases the charging rate What is more desirable is a high charging rate when the battery is low and a low charging rate when the battery is fully charged Because of this, many cars are now fitted with a voltage regulator

The voltage regulator will not increase the capacity of the generator but it does increase the efficiency of the generator and charge the battery under the constant potential system used in battery charging stations





Delco-Remy . . . This voltage regulator consists of the conventional type of cutout relay and the voltage regulator unit The cutout relay has an improved winding to adequately provide for the higher output generators now being used An extra set of contact points is incorporated on the armature of the cutout relay to provide a conventional ground for the solenoid relay where the relay type of starting motor switch is used This makes it impossible to mesh the starting motor gear with the flywheel when the generator is charging enough to close the cutout relay points There is no electrical connection between this auxiliary set of points and the regulator unit nor is there any electrical connection between the cutout relay and the voltage regulator Both units are assembled under the same cover for convenience only Generator outputs should be checked by connecting an accurate reading ammeter in series at the regulator terminal stamped "AMM" and voltage checked with a voltmeter connected at the regulator terminal stamped "GEN"

The voltage regulator unit consists of two cores, which with their windings form an electro magnet One core is wound with many turns of fine wire and is connected to the "off" side of the ignition switch As the battery voltage increases a predetermined amount, the magnetic pull on the regulator increases until its armature is attracted toward the core, against a spring tension A pair of contacts in series with the generator field is then opened and a resistance shunting these contacts is inserted in the field circuit This resistance is sufficiently large to reduce the generator voltage below that necessary to open the contacts and they immediately close, eliminating the resistance, and thus increasing the voltage of the generator This cycle occurs many times per second, resulting in a generator voltage that is held practically constant

The second core is wound with a few turns of wire in series with the generator field and aiding the main winding When the contacts break, the field circuit is instantly reduced, and likewise, the magnetic pull on the armature, thus allowing quicker closing of the contacts and more rapid vibration of the armature The proper regulator must be used in accordance with whichever terminal of the battery is grounded as the regulator contact points are composed of dissimilar metals and polarity has a marked effect on their performance

This regulator is over compensated for temperature so that the regulators have a lower voltage when hot It is necessary to compensate for temperature as a cold battery requires a higher charging voltage than one that is warm, consequently, it is necessary

to vary the charging voltage with the temperature of the battery. The compensation is accomplished by the use of a bi-metal hinge on the regulator armature. The amount of compensation is in proportion to the ratio of the force exerted by the bi-metal to the magnetic pull on the armature, and within certain limits, an increase in the air gap between the armature and magnetic core will increase the temperature compensation. This makes it unnecessary to change the voltage setting for winter and summer driving.

A feature of this regulator is connecting the regulator coil windings to the ignition switch. A regulator will maintain a given voltage at whatever part of the electrical system the coil windings are connected and therefore the connection is made at the ignition switch because its voltage is very close to battery voltage.

Regulators are adjusted for both hot and cold temperatures. At 150 degrees they should regulate for 7.4 to 7.6 volts and at 70 degrees for 7.65 to 8.05 volts, regulator voltages should be checked by connecting an accurate reading voltmeter at the regulator terminal marked IGN and a convenient ground.

Contacts should be adjusted to meet squarely and with pressure of 2¾ to 3½ ounces. Adjust pressure by bending the contact spring carrying the upper contact. Check pressure at a point opposite the contacts and at the instant the points separate, using a spring scale.

With the fibre bumper barely touching the contact spring stop, the air gap between armature and center of the core should be .070 inches. If it is impossible to secure the proper cold and hot regulator voltage, the air gap may be increased to raise the cold setting with respect to the hot setting or vice versa. Adjust the air gap by bending the contact spring stop.

Adjust the lower armature stop so that the points will open .015″ to .025″ by depressing the armature. Adjust the upper armature stop so that when the armature is up there will be a clearance of .008″ to .013″ between the fibre bumper and its stop.

Set the regulator voltage to the specifications mentioned above. The voltage is regulated by bending the spiral spring hanger. Increasing the spring tension increases the voltage setting and decreasing the tension decreases the voltage setting.

Voltage must be checked with the regulator cover in place. When checked on the bench test, the regulator should be in the same position as on the car, that is horizontal or vertical, and the base must be grounded to the generator frame. This type of regulator must never be adjusted or run on open circuit.

Oldsmobile and Pontiac . . . These cars are fitted with third brush type generators. On Pontiac cars the third brush is not adjustable while on the Oldsmobile cars it can be adjusted without removing the cover band. To make an adjustment loosen the lock screw at the commutator end plate and then move the third brush in the direction of armature rotation to increase the charge and against the rotation to decrease it.

A Delco-Remy voltage control unit is mounted on the dash and consists primarily of a set of contact points, two voltage coils and a resistance. The opening and closing of the contact points is dependent upon the predetermined calibration of the voltage regulator.

When the generator first starts charging, the voltage control relay points are closed and the generator field circuit is to ground allowing the generator to produce its full output. As the battery becomes fully charged and the generator reaches its predetermined high value, 8.3 volts, the contact points open through the action of the generator voltage on the coils of the voltage regulator. This automatically inserts the resistance into the generator field circuit which decreases the generator charging rate. When the generator has decreased to its predetermined low value, 7.2 volts, the contact points close. This automatically removes the resistance from the generator field circuit and allows the generator to again produce its maximum output. This prevents the generator from overcharging the battery.

The voltage regulator is accurately calibrated at the factory and should not be adjusted unless inoperative. If inoperative, first check the field fuse directly under the regulator box in the wire harness and if necessary, replace it with a 6 ampere fuse.

The regulator may be adjusted as follows: Hold the armature down against the lower armature stop and set the air gap at .029″ to .038″ at the center of the core. Spring tension measured at the contacts should be approximately ¾ ounce. Do not measure this with the armature down.

Release the armature and gauge the armature and the lower armature stop at .028″ to .040″. This travel is obtained by bending the upper armature stop backward or forward. With the armature in the extreme downward position again, the contact point opening should be between .008″ and .013″. Connect an accurate reading voltmeter at the terminal marked BAT and to the ground. Run the generator until the armature box has reached a very warm temperature. Control relay points should open at 8.3 volts. Increase or decrease opening voltage by increasing or decreasing the armature spring tension, respectively.

Control relay points close at 7.2 volts. Closing voltage is increased by increasing the armature air gap, and decreased by decreasing the air gap. It is only necessary to bend the lower armature stop slightly to obtain closing voltage adjustment.

When checking the opening and closing voltages, cycle the regulator before arriving at a true reading. The cover must be in place when checking the readings. Do not overrun the voltages reached at each point. Insert a small resistance into the charging circuit between regulator and battery if voltages cannot be reached.

If the air gap has been altered considerably to obtain the correct closing voltage it will probably be necessary to bend the upper armature stop to allow for any large bend. In the event this adjustment is changed, the contact point opening should again be checked within the limits specified.

This control unit is overcompensated for temperature change, therefore the hot opening and closing voltages will be lower than the cold opening and closing voltages. Make all checks at a room temperature of about 70 degrees.

Even with a fully charged battery it may be difficult to obtain a voltage setting within the specified limits unless a small resistance is connected in the charging circuit between the regulator and the battery. A variable resistance of sufficient current carrying capacity to make it possible to obtain approximately .25 ohms resistance can be used to increase the voltage. The lowest possible resistance to obtain the proper voltage should be used to prevent vibrating of contacts.

To cycle the regulator increase the speed of the generator until the voltage is reached at which the points just open, then decrease the speed until the points just close. After making this cycle obtain true readings at the very instant the points open and close.

Chrysler 6, Airstream 8, Airflow 8, De Soto, Dodge, Packard 120 and Plymouth . . . Third brush type Auto-Lite generators are used. On the back face of the pulley is a centrifugal fan which circulates air through the unit. This method of cooling allows the charging rate to be held at a higher output without danger of overheating or burning the armature. The generator is fitted with a cutout relay and a voltage regulator mounted on top of the generator in a single housing.

Two adjustments are provided for the generator, that for changing the rate of charge and for setting the generator cutout relay.

Before attempting to set the charge rate on cars fitted with this voltage regulator, connect a jumper wire from the fuse cup to the ground. This cuts out the voltage control unit, which is necessary while adjusting the charge rate. Be sure to remove this wire after the charge rate is set.

When adjusting the generator charging rate, the generator should be removed from the engine and the commutator band removed so that the exact space between the third brush and the main brush can be observed.

Service on the 1935 Cars . . . VOLTAGE REGULATORS

The third brush rocker ring can then be rotated and should be adjusted so that there are four commutator bars exposed between the third brush and the main brush nearest the third brush. In no case should the brushes be set closer together than this.

The cutout relay points close at 6.5 to 7.3 volts and open at 0 to 3 amperes discharge current. The contact point opening should be set at .015″ to .025″. When adjusting this unit the following procedure should be adhered to. Align the points and set the point opening within the specified limits. The correct point opening can be obtained by bending the armature stop. Adjust the spring post to obtain the correct voltage for closing the contact points. Bending the spring post to increase the tension will increase the voltage at which the points close.

Normally the voltage control relay points are closed and they remain closed when the generator starts to charge the battery. When the battery becomes fully charged and the generator terminal voltage reaches a predetermined high value, the contact points open, thereby automatically connecting a resistance into the field circuit of the generator, which decreases the generator charging rate. When the voltage has decreased to its predetermined low value, the contact points will close, shorting out the resistance in the field circuit, causing the generator to again charge at the higher rate. This unit prevents the generator voltage from becoming abnormally high after the battery has reached the fully charged condition, provided the generator third brush is properly set and all connections are clean and tight.

This voltage regulator also regulates the charging rate according to temperature. It permits the generator to charge at higher rates in the winter when temperatures are low and a lower rate in summer when temperatures are high. When the temperature outside is zero but somewhat higher under the hood, the regulator compensates for the increased resistance of a cold battery by raising the generator voltage to about 9 volts. At 70 degrees to about 8½ volts, while at 140 degrees which is very nearly the usual operating temperature under the hood on a hot day, the regulator will operate at 8 volts.

The compensation for temperature is accomplished by the use of a magnetic shunt, which by-passes part of the magnetic flow when cold and to a lesser degree when hot. In other words the magnet is stronger when hot than it is when cold, consequently the points in the generator field circuit are opened sooner in warm weather than in cold weather so that the resistance in the field circuit, which weakens the generator charging rate, is included in the circuit for longer periods during warm weather and shorter periods during cold weather. Based on a 20 ampere hour charge rate, the circuits of the voltage regulator are so balanced that the battery characteristics trail the regulator by approximately ½ volt.

The voltage regulator also compensates the charging rate for increases in load. If the generator is operating on a low rate and a load slightly greater than the low rate is placed on the circuits, the regulator will immediately go to the higher rate due to the drop in voltage occasioned by the increase in electrical load. There is approximately one volt difference in the generator output occasioned by the voltage regulator, that is with the field resistance cut out, the generator potential throughout its entire speed range is raised about one volt above that at which it would charge with the resistance cut in. The generator thereby carries the maximum current demands when these demands exist without forcing the battery to accept this high rate when fully charged, or when no current demands exist.

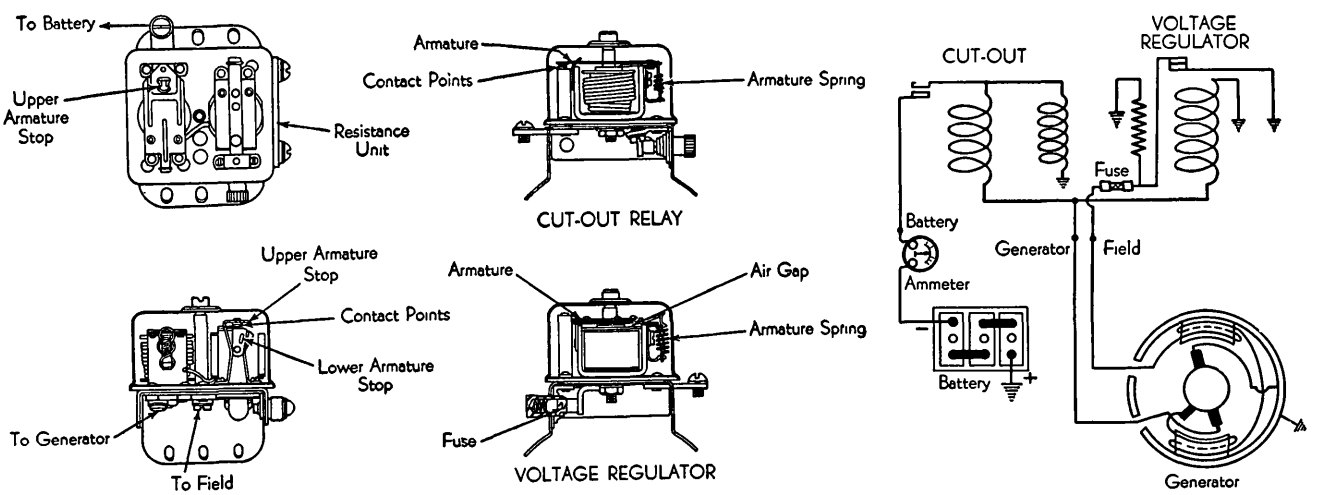
To make adjustments, remove the generator and check it on a test bench. With the armature in the extreme downward position, the contact point opening should be set at .008″ to .013″. Adjustment is made by bending the upper contact support legs. Connect an accurate voltmeter between the terminal marked BAT and the ground. With the generator at room temperature, the control relay points should open at 8.3 volts and close at 7.3 volts. Because this control unit is overcompensated for temperature change, the hot opening and closing voltages will be lower than the cold opening and closing voltages. When checking the opening and closing voltages, cycle the regulator before arriving at a true reading.

The cover must be in place when checking voltage readings. In addition, do not overrun the voltages reached at each point. If specified voltages cannot be reached, insert a resistance in the charging circuit.

Increase or decrease opening voltage by increasing or decreasing the armature spring tension. This is done by bending the lower spring hook. Closing voltage is increased by increasing the armature air gap and decreased by decreasing the armature air gap. It is only necessary to turn the lower armature stop slightly to obtain the closing voltage adjustment.

To cycle the regulator, increase the speed of the generator until the voltage is reached at which the points just open, then decrease the speed until the points just close. After making this cycle, obtain the true voltage readings at the instant the points open and close.

Even with a fully charged battery, it may sometimes be difficult to obtain a voltage setting within the specified limits unless a small resistance is connected in the charging circuit. A variable resistance of sufficient current-carrying capacity that will make it possible to obtain approximately .25 ohm resistance can be used to increase the voltage. The lowest possible resistance to attain voltage should be used, to prevent vibrating of contacts. Be sure to remove the resistance after setting has been obtained.



STARTING SWITCHES

Chrysler Airflow 8's, De Soto Airflow 6, Packard 120 and Plymouth De Luxe 6 . . . An Auto-Lite solenoid which operates a mechanical shift type of starting motor is used It consists of a solenoid and a solenoid relay attached to the starting motor and is energized, after the ignition switch is turned on and the starter button depressed When the starter switch is depressed current flows through the solenoid relay to the ground This causes the relay armature to pull down and close the contact points Current then flows from the battery connections at the solenoid through the relay points and coils of the solenoid The solenoid winding is made up of two coils One coil is connected from the relay points to the starter side of the starter switch, while the other coil is connected from the same side of the relay points to the ground When the relay points are first closed, current flows through both coils which immediately pull in the solenoid plunger and the starting motor pinion shift lever, engaging the pinion of the starting motor with the flywheel, the starter switch disc is closed and the starting motor cranks the engine As the starter switch disc is closed, the coil from the battery lead post to the starter side of the starter switch is shorted out The other coil remains in the circuit with sufficient current to hold the pinion in engagement with the flywheel while the engine is being cranked As soon as pressure on the starter switch is released, the relay contacts open breaking the solenoid circuit and allowing the return spring on the shift lever to disengage the starting motor pinion

Adjustments . . . It is essential that the relation between the overrunning clutch drive or pinion and the solenoid switch be maintained within proper limits This pinion clearance adjustment can only be accurately set after the starting motor is removed from the car Checking the pinion clearance should be included in the bench test This operation can be accomplished best by using the battery current to hold the plunger in the engaged position while adjusting the plunger stud linkage The strap connecting the solenoid to the starter terminal should be removed so that the pinion will not spin By connecting the battery to the frame of the starting motor for a ground and to the push button or ungrounded terminal of the solenoid relay, the solenoid hold in coil will become energized Push the plunger into the engaged position by hand, where it will remain in the proper position for making pinion clearance adjustment

The shift lever adjusting stud can now be adjusted so that there will be 1/8" clearance between the end of the pinion and the starting motor drive housing Do not hold the pinion in the engaged position by pushing on the shift lever while making this adjustment, as the play between the pin in the adjusting stud link and the slotted hole in the lever is correct only when the solenoid is pulling on the adjusting stud link

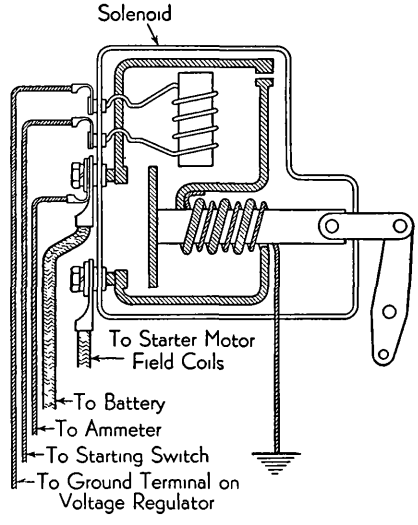
The contact point opening of the solenoid relay should be 025" to 030" and is adjusted by raising or lowering the upper armature stop With the contact points closed, the air gap between the armature and core should be 005" to 007" This is adjustable by moving the lower armature stop Contact points close at 3 2 to 3 6 volts and open at 2 0 volts or less

Failure to operate . . . In case the starter fails to operate when the push button is pushed in the following procedure should be followed and in the following order Be sure all connections are clean and tight Remove the solenoid relay cover With the push button depressed, the contacts should close Failure to close may be due to faulty push button switch, relay coil or a faulty wire between the push button and the relay If the points close when a jumper is placed across the terminals of the push button disc, then the switch is defective and should be replaced If using the jumper does not cause the points to close, place a jumper from the relay terminal to the battery terminal of the solenoid If the points still fail to close, then the trouble is in the relay coil and this assembly should be replaced If the points close and the starter fails to operate, the points should be cleaned with fine sandpaper No "00"

If the starter fails to operate, all the soldered connections of the solenoid lead wires should be examined for loose connections If these connections are tight, the solenoid is defective and the unit should be replaced

If the starting motor pinion disengages from the flywheel after a start is made, but the starter switch fails to break contact and the armature continues to revolve, the starter switch push rod may be stuck If so, replace the solenoid assembly

If the starter tries to engage when the engine is running, look for trouble in the push button switch or the push button switch terminals They may be vibrating into contact with each other, This disorder may also be attributed to a weak or broken return spring or hinge spring on the solenoid relay armature

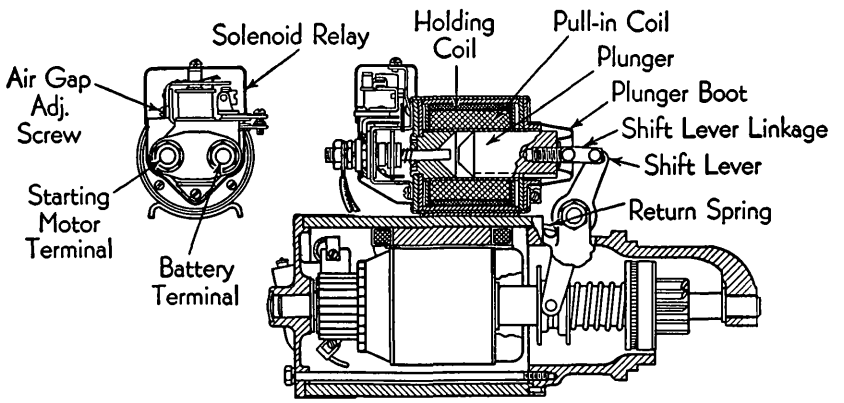


Pontiac 8 . . . A Delco-Remy solenoid starting switch is used When the ignition switch is turned on, depressing the accelerator rotates the contacts inside the vacuum switch completing the switch circuit This causes the solenoid relay contacts to close Current from the battery then flows through the operating and hold-in coils of the solenoid, magnetizing the solenoid plunger, which shifts the pinion into engagement with the flywheel and closes the starter switch.

Closing of the starter switch causes the starter to crank the engine and also cuts out the operating coil of the solenoid The magnetic pull of the hold-in coil is sufficient to hold the pinion in mesh after the shifting has been performed This reduces current consumed by the solenoid while the starter is operating

As soon as the engine is running,

Service on the 1935 Cars . . . STARTING SWITCHES



the vacuum switch is opened by the manifold vacuum. This stops the flow of current through the solenoid relay winding and causes the solenoid relay contact to open, breaking the solenoid circuit. As an additional safeguard, current in this circuit also passes to the ground through a pair of contacts mounted on the generator relay. When the generator starts charging these contacts open and, should the vacuum switch contacts still be closed, stops the flow of current through the solenoid relay winding. A spring on the starter shifter yoke pulls the solenoid plunger back allowing the starter switch to open, and at the same time pulls the pinion out of mesh with the flywheel gear.

The manual shift eliminates any possibility of the starter pinion disengaging from the flywheel when the engine fires only once, as when cold or flooded, since it holds the starter in mesh with the flywheel until the engine is firing regularly. This type starting motor cannot become engaged with the flywheel while the engine is running.

When it is necessary to remove the solenoid for repairs, it is important to see that pinion travel is properly adjusted when the solenoid is reinstalled.

Remove the pin from the solenoid plunger and push the solenoid plunger, not shift lever plunger, all the way forward. Take the lash out of the overrunning clutch by pressing on the clutch shell with your finger. Now adjust the connecting stud at the solenoid until the plunger pin can just be inserted at the forward end of the slot with the pinion ⅛″ from the housing.

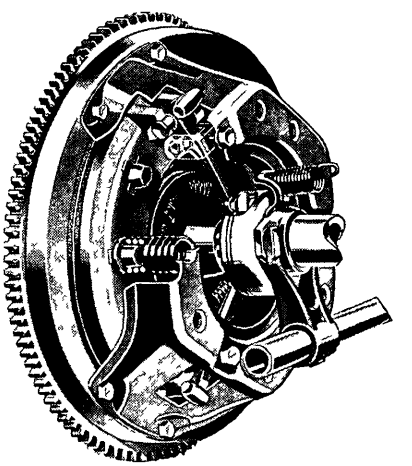
The solenoid relay contact opening should be .030″ to .045″. The air gap should be .010″ to .014″ with the points closed. The contact points open at 1.6 to 2.0 volts and close at 3.2 to 3.6 volts.

CENTRIFUGAL CLUTCH

A LONG semi-centrifugal clutch is used on Ford V8 and Packard 120 cars. The clutch throwout plate is provided with nine springs, sealed on asbestos base insulating washers. These washers safeguard the springs against heat, aiding in prolonging their effective life, and therefore should always be replaced when the clutch is assembled. The clutch cover is triangular in shape with three legs extending down to meet the flywheel. The straight side walls form the side of the triangle and are arched to clear the pressure plate. This arch construction in addition to being very rigid also provides ventilation for the pressure plate. At the points where the levers are mounted, three forged steel yokes are secured by cap screws. The clutch cover is attached to the flywheel by six alloy steel bolts. They are special screws and under no circumstance should ordinary cap screws be used.

Three forged steel release levers are used. The levers are centrifugally out of balance so that the faster the clutch revolves, the more the levers try to throw out and the greater pressure they exert on the pressure plate. The levers are mounted on needle bearings to reduce the resistance to the centrifugal force, and help maintain low clutch pedal pressure. On the Ford car, only six springs with a total load of 810 pounds pressure are used. At zero speed the load on the pressure plate is only that created by the pressure springs, but as the engine is started and the speed increased the load increases. It increases slowly at first, but more rapidly as the higher range of speed is reached until at 4000 revolutions per minute a total pressure of 1980 pounds is exerted. The lever adjustment for plane to flywheel surface is through hardened screws in the tips of the levers.

On Packard cars the throwout bearing is an especially large capacity ball bearing type, provided with felt inserts between the balls to hold and supply oil to the bearing as required. The bearing is pressed on a clutch release sleeve on the clutch shaft rear bearing retainer. The bearing retainer has cast in its top an oil collecting cup. Oil dropped in this cup from an oil can passes through a hole connecting a cylindrical recess, cast on the inside of this bearing retainer sleeve. The oil collects in the bottom of this recess and is fed through three drilled passages to the felt retainer in the ball bearing. The felt is caged with the balls in the ball bearing so that the oil picked up by the felt is fed in the correct amount to the bearing when in operation. By this method, sufficient lubrication is stored



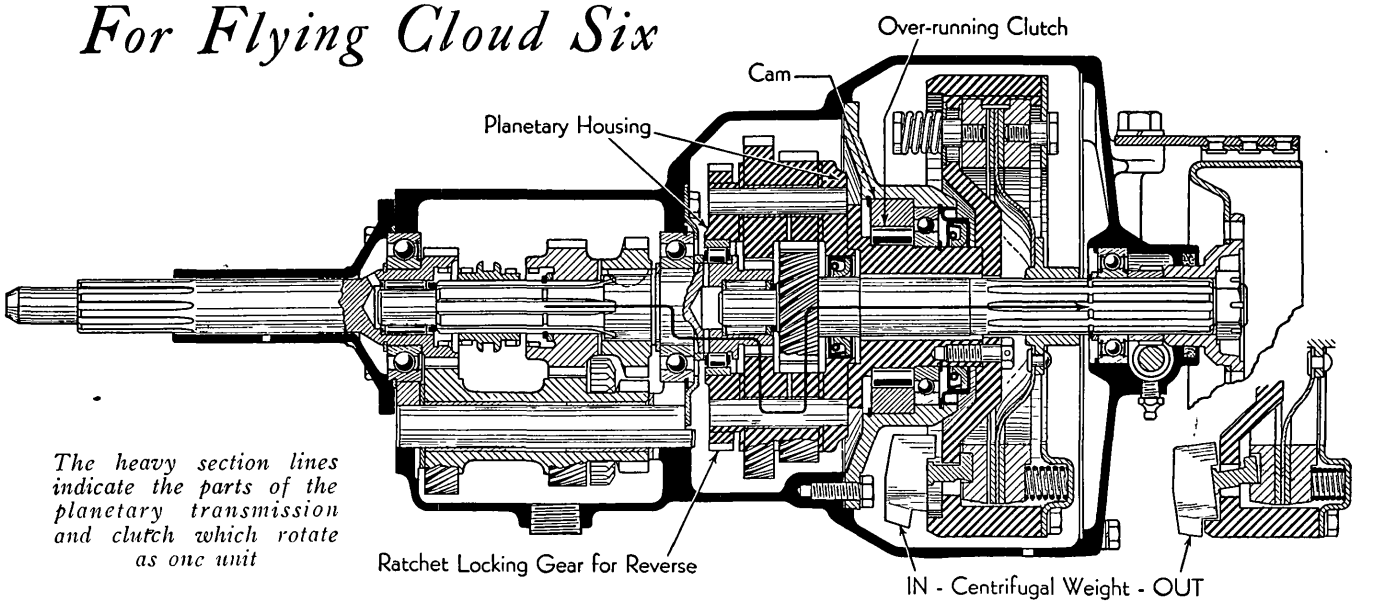
in the felt to last for more than 2000 miles.

On Ford cars the clutch pedal should be adjusted to 1½″ to 2″ free play with the engine idling or stopped. The play has been increased over past years so that as the clutch levers move back slightly from the centrifugal action they will not contact the throwout bearing and cause it to revolve.

On Packard cars the clutch pedal to toeboard clearance with the clutch engaged should be ½″. The free movement of the clutch pedal with the engine stopped or idling should be 1½″.

New Reo Self-Shifter

For Flying Cloud Six



The heavy section lines indicate the parts of the planetary transmission and clutch which rotate as one unit

SERVICE information on the self shifter transmission now offered on the Reo Flying Cloud as optional equipment is not available at the time of going to press but being familiar with its construction should assist a mechanic in locating trouble, should it arise.

Following Reo's previous design there are two two-speed units in series. The rear one is a planetary type in which the shift from low to high is accomplished by a centrifugally-operated plate clutch. The front unit provides a high and low-speed driving range for the two-speed automatic unit. The low range is for heavy going or very steep hills, while the high range is used under all other circumstances. The gears in both units are silent helical except reverse.

The overall gear ratios with a 4.27 rear axle are as follows:

High-speed range	High gear	4.27
	Low gear	8.11
Low-speed range	High gear	5.68
	Low gear	10.76

For normal driving, when you start you disengage the clutch, move the handle on the instrument panel forward from neutral to engage the high speed range, and then let the clutch in. The car moves away in low gear. The shift to high occurs whenever the car speed exceeds 12 m.p.h. and the throttel is closed sufficiently to cause the car to drive the engine, thus it is possible to speed up and slow down in low indefinitely provided the throttle is not closed enough to cause torque reversal. The shift from high to low gear takes place automatically whenever the speed drops below 12 m.p.h. This low gear ratio, it should be noted, is in between the second and low ratio used on the conventional three-speed transmission.

For severe grades or very soft roads the transmission is shifted to the low range by disengaging the clutch and pulling the handle all the way to the rear. The automatic shift from second to high occurs at approximately the same speed as in the high range.

Reverse is secured by pulling the handle to the rear after turning it through a 45 degree angle.

The drawing shows that the high and low range unit is a conventional design with a sliding toothed member for engaging the high and low ratios while reverse is secured by meshing a sliding pinion.

The planetary unit consists of a housing in which are two pairs of pinions which mesh with gears on the front and rear mainshafts. In low, as shown by the large arrow, the power is transmitted through these gears inasmuch as the planetary housing is prevented from rotating in the opposite direction by an over-running clutch whose cam is stationary in the transmission housing. In other words the over-running clutch takes the place of the old-fashioned planetary brake band.

Before explaining the shift to high, it should be noted that the clutch disc is splined to the rear mainshaft and that the rest of the clutch assembly including the centrifugal weights is secured to the planetary housing.

Now, let us assume that the car is traveling faster than 12 m.p.h. in low gear and that the throttle is open. The centrifugal mechanism and the planetary housing are stationary. However, the instant the throttle is closed and the car starts to drive the engine, the rear mainshaft forces the planetary housing and the clutch mechanism to rotate* in the same direction the mainshaft itself is turning, causing the centrifugal weights to fly out to bring the centrifugal clutch into engagement. The rear mainshaft and the planetary housing are now locked together and, therefore, the planetary mechanism must rotate as one unit to give direct drive.

When reverse is engaged the planetary housing is held against rotation by a pawl (not shown) which engages the ratchet gear on the outside of the planetary housing.

* The over-running clutch is free in this direction.

Ignition Timing

ON 1935 CARS

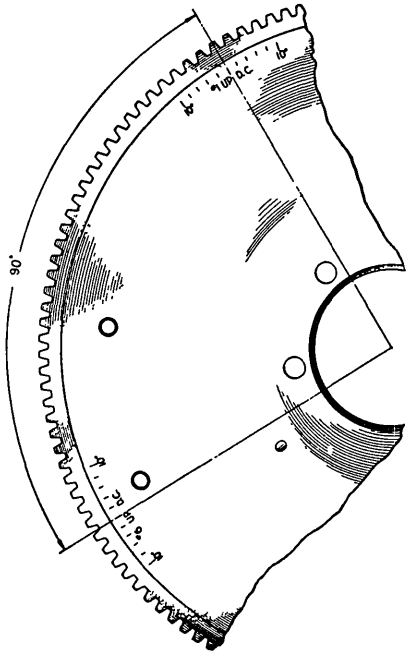
BY EDWARD H. BARRY

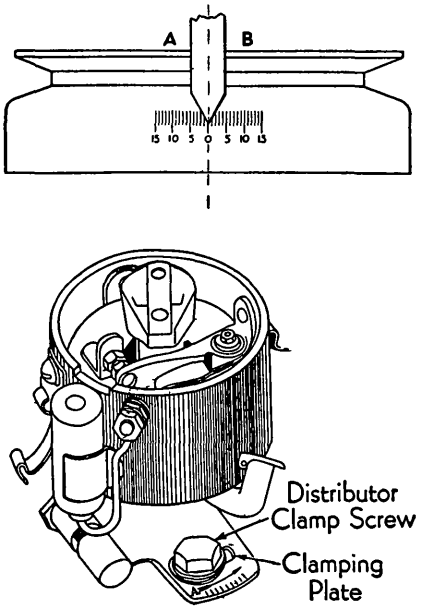
SOME CARS are fitted with a vacuum spark control unit, operated by the vacuum in the intake manifold, which is connected to the breaker plate or to the distributor control arm. Under normal driving conditions, part throttle, the vacuum in the intake manifold is sufficient to act on the diaphragm and advance the spark. During acceleration or when the engine is pulling heavily, the vacuum is not sufficient to operate the vacuum unit diaphragm so that the spark is retarded by a spring which bears against the diaphragm. The vacuum for operating the diaphragm is taken at a point just below the throttle fly to prevent the spark from advancing while the engine is idling.

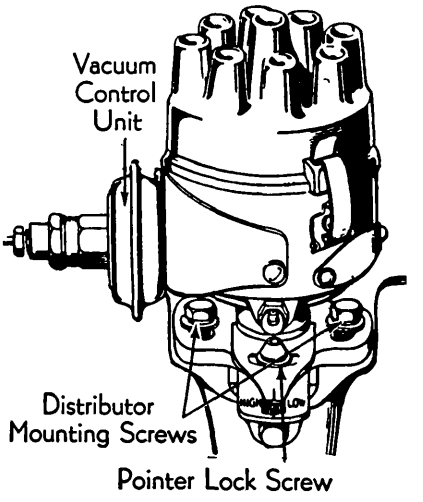
Many distributors are fitted with a device, usually called an octane selector, at the dash or at the distributor control arm so that the spark can be adjusted in relation to the tendency of the grade of fuel being used to cause the engine to knock. This does not affect the range of the centrifugal or vacuum spark advance.

When a synchronizing tool is used on distributors fitted with double breakers to set the adjustable points in their correct relation to the stationary points, it is only necessary to time the stationary points with the engine.

It is often advisable to mark the line on the flywheel or impulse neutralizer at which the breaker points open with white chalk so that it will be easily seen. This is especially helpful when the engine is idling and a synchroscope or neon timing light is used which flashes brightly when the points for the cylinder being timed







Left—Packard 120 flywheel markings. Top center—Chrysler impulse neutralizer markings. Bottom center—Terraplane octane selector. Right—Buick 40 octane selector and vacuum spark control unit.

open, giving the impression that the timing mark is stationary.

Auburn 653—A single breaker distributor is used and there is no manual spark control. Breaker points should open when No. 1 piston is coming up on its compression stroke and the UDC 1-6 mark on the flywheel is one tooth from registering with the mark at the timing peep hole.

Auburn 851—Timing instructions are the same as described for Auburn 653 except that the flywheel is marked UDC 1-8.

Buick 40—A single breaker distributor is used. There is no manual spark control but a vacuum control unit and an octane selector are fitted.

When timing the engine for use with regular gasoline, the breaker points should open when No. 1 piston is coming up on its compression stroke and the line marked ADV on the flywheel registers with the line at the timing peep hole. The ADV line is filled with white paint. Loosen the distributor mounting screws and rotate the distributor either forward or backward until the lines register. The pointer index line should be directly opposite the middle line on the scale to which it is attached. If the lines do not register, loosen the pointer lock screw with a 3/16" Allen set screw wrench and move the pointer to its correct position.

If Ethyl gasoline is used, time the engine as described above. Then loosen the distributor mounting screws and rotate the complete distributor clockwise until the index line on the pointer is three divisions from the center line on the scale, toward the high side.

To adjust the octane selector loosen the distributor mounting screws and rotate the distributor so that the pointer is toward the low side of the scale for low octane fuel and toward the high side, as described for timing with Ethyl fuel, for high octane fuel. The exact amount depends upon the octane value of the fuel being used. The position should be such that only a slight knock is evident at 10 m.p.h. when accelerating with the throttle wide open.

SPECIFICATIONS

Name and Model	Breaker gap	Firing order	Spark plug gap
Auburn 653	018	153624	.025
Auburn 851	.013	16258374	.025
Buick 40	.013	16258374	.020
Buick 50	.013	16258374	.020
Buick 60	.013	16258374	.020
Buick 90	.013	16258374	020
Cadillac V8	.013	E	025
Chevrolet Std. 6	.021	153624	.032
Chevrolet Mast . 6	.021	153624	.032
Chrysler 6	.020	153624	.025
Chrysler 8, AS	018	16258374	.025
Chrysler 8, AF	.018	16258374	.025
Chrysler Imp. 8	.018	16258374	.025
Chrysler Imp. Cust 8-137	.018	16258374	.025
Chrysler Imp. Cust 8-146	.018	16258374	.025
DeSoto 6, AS	.020	153624	.025
DeSoto 6, AF	020	153624	025
Dodge 6	.020	153624	025
Ford V8	015	15486372	.025
Graham 6	.018	153624	.027
Graham Spec. 6	.018	153624	.025
Graham 8	.018	16258374	025
Graham Supercharged 8	.018	16258374	.025
Hudson Big 6	.018	153624	.022
Hudson 8	.018	16258374	.022
Hupmobile 517	015	153624	.028
Hupmobile 518	.015	153624	.028
Hupmobile 521	.015	153624	.028
Hupmobile 527	.020	14738526	.028
LaFayette 6	.020	153624	.018
LaSalle 8	.018	16258374	025
Nash Adv. 6	.020	153624	.022
Nash Adv , Amb. 8	.020	16258374	.022
Oldsmobile 6	.018	153624	.025
Oldsmobile 8	.018	16258374	.025
Packard 120	.018	16258374	025
Packard 8	.018	16258374	.025
Packard Super 8	.018	16258374	.025
Plymouth 6	.020	153624	.025
Pontiac 6	.018	153624	.025
Pontiac 8	.018	16258374	.025
Reo Flying Cloud 6	020	153624	.025
Reo Royale 6	.020	153624	.025
Studebaker Dict. 6	.020	153624	.023
Studebaker Comm. 8	020	16258374	.025
Studebaker Pres. 8	.020	16258374	.025
Terraplane 6	018	153624	.022
Willys 77	018	1342	024

E....1R, 1L, 4R, 4L, 2L, 3R, 3L, 2R

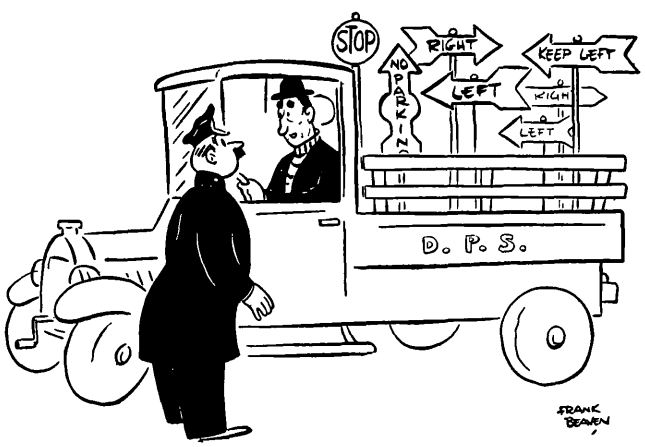
Ignition Timing 1935 Cars

Chevrolet Standard and Master DeLuxe 6—A single breaker distributor is used. There is no manual spark control but a vacuum spark control unit and an octane selector are fitted. Set the octane selector pointer at O on the scale. Breaker points should open when No. 1 piston is coming up on its compression stroke and the steel ball in the flywheel registers with the pointer at the timing peep hole. When adjusting the octane selector for the type of the gasoline being used, set it at the point where the engine pings slightly under a heavy load.

Chrysler 6, DeSoto Airstream 6—A single breaker distributor is used. There is no manual spark control but a vacuum spark control unit is fitted which advances the spark on closed throttle to give maximum fuel economy. On full throttle, the drop in suction permits the spark to be retarded to avoid knocking. Degrees in engine travel are indicated by a scale on the crankshaft pulley. Each line indicates a travel on one degree. Top dead center position of No. 1 piston is indicated by O on the scale. Breaker points should open when No. 1 piston comes up on its compression stroke and O on the scale registers with the pointer on the gear case cover.

Chrysler Airflow 8—Timing instructions are the same as described for Chrysler Airstream 6 except that the fifth line after the O mark on the scale should register with the pointer when the points open. The marks are on the impulse neutralizer.

Chrysler Imperial 8, Imperial Custom 8-137—Timing instructions are the same as described for Chrysler Airstream 6 except that no vacuum spark control unit is fitted and the marks are on the impulse neutralizer.



"Okay to make a left turn here?"

Chrysler Imperial Custom 8-146—Timing instructions are the same as described for Chrysler Airstream 6 except that the second line after the O mark on the scale should register with the pointer when the points open. No vacuum spark control unit is fitted and the marks are on the impulse neutralizer.

DeSoto Airflow 6—Timing instructions are the same as described for Chrysler Airstream 6 except that the third line after the O mark on the scale should register with the pointer when the points open. The marks are on the impulse neutralizer.

Dodge 6—Timing instructions are the same as described for Chrysler Airstream 6 except that the second line after the O mark on the scale should register with the pointer when the points open.

Ford V8—The distributor is at the front of the engine and driven off the end of the camshaft. An eight lobe cam with two breaker arms and a single ignition coil are used. One set of points opens the circuit and the other closes it to permit the circuit to be closed longer and to eliminate the necessity of synchronizing the points. There is no manual spark control but the vacuum brake automatically retards the spark in direct proportion to the load. An adjustment can be made at the vacuum brake so that maximum results will be obtained from the grade of fuel being used. To make an adjustment, loosen the adjusting screw lock nut at the vacuum brake and back off the adjusting screw until the engine pings under load. Then tighten the adjusting nut just enough to remove the ping. Tighten the lock nut to retain the adjustment.

Graham 6, Special 6, 8—A single breaker distributor is used. There is no manual spark control. Breaker points should open when No. 1 piston is coming up on its compression stroke and the line marked SA-1 on the flywheel, just ahead of the DC-1 mark, registers with the pointer at the timing peep hole.

Graham Supercharged 8—Two breaker arms, a four lobe cam and one ignition coil are used. There is no manual spark control. Stationary points should open when No. 1 piston is coming up on its compression stroke and the line marked SA-1 on the flywheel, just ahead of the DC-1 mark, registers with the pointer at the peep hole. The adjustable points should be synchronized with a gauge so that they will open exactly 90 degrees of flywheel travel after the stationary points.

Hudson 6, Terraplane 6—A single breaker distributor is used. An octane selector is fitted. Loosen the distributor clamping screw and turn the distributor housing clockwise to the limit of its slot. Breaker points should open when No. 1 piston is coming up on its compression stroke and the line marked U.D.C. 1-6 on the flywheel registers with the timing mark at the peep hole. To get the best setting for the grade of fuel being used, the car should be driven until the engine has reached its normal operating temperature. Then allow the car to slow down to 7 m.p.h. in high gear on a level, hard surfaced road, and depress the accelerator rapidly to its limit of travel. As the car accelerates from 10 to 15 m.p.h. a slight spark knock should develop. If a knock is not heard, loosen the distributor clamp screw and turn the distributor clockwise one graduation of the clamping plate and repeat the acceleration test. The higher the octane rating of the fuel being used, the greater the advance required to get maximum performance and fuel economy. However, the timing should not be set ahead of the ¾" advance mark.

Hudson 8—Timing instructions are the same as described for Hudson 6 except that the flywheel is marked U.D.C. 1-8.

Hupmobile 517, 518, 521—A single breaker distributor fitted with an octane selector is used. Set the pointer on the distributor arm opposite the middle line of the scale to which it is attached. Breaker points should open when No. 1 piston is coming up on its compression stroke and the line slightly ahead of the line marked DC 1-6 on the flywheel registers with the finished bosses at the timing peep hole. The pointer on the advance arm can then be adjusted to get best results from the grade of fuel that is being used.

Hupmobile 527—Timing instructions are the same as described for Hupmobile 517 except that the flywheel is marked 1-8 and the line just ahead of it should register with the center line of the timing peep hole.

LaFayette 6—A single breaker distributor is used. There is no manual spark control. Breaker points should open when No. 1 piston is coming up on its compression stroke and the first line, marked IGN, on the vibration dampener is directly under the pointer on the timing chain case cover. Loosen the set screw at the base of the distributor and shift the distributor if necessary.

LaSalle 8—Two breaker arms, a four lobe cam and one ignition coil are used. There is a manual spark control button on the dash and when the button is in, the control arm is in its full advance position. Stationary breaker points should open when No. 1 piston is coming up on its compression stroke and the line marked IGA on the circumference of the harmonic balancer registers with the pointer on the timing chain case cover. Adjustable points open when the line marked IGA#6, a quarter of a revolution from the IGA mark, registers with the pointer.

Nash Advanced 6—Two breaker arms, a six lobe cam and two ignition coils are used. There is no manual spark control. Stationary points should open when No. 1 piston is coming up on its compression stroke and the first line, marked I.G.N., on the vibration dampener is directly under the pointer on the chain case cover. The adjustable points should open at the same instant to get the full benefit of two spark plugs in each cylinder. Both sets of points must have exactly the same gap. Timing lights should be used to secure an accurate setting.

Nash Advanced 8—Two breaker arms, an eight lobe cam and two ignition coils are used. Otherwise the timing instructions are the same as described for Nash Advanced 6.

Oldsmobile 6—A single breaker distributor is used. There is

no manual spark control but the distributor control arm can be adjusted so that maximum performance will be obtained from the grade of fuel being used. The pointer of the control arm should be opposite O of the scale to which it is attached. Breaker points should open when No. 1 piston is coming up on its compression stroke and the line marked IGN on the flywheel registers with the pointed screw at the timing peep hole.

Oldsmobile 8—Two breaker arms, a four lobe cam and one ignition coil are used. There is no manual spark control but the distributor arm can be adjusted so that maximum performance will be obtained from the grade of fuel that is being used. The pointer on the control arm should be opposite O of the scale to which it is attached. Cylinders 6, 5, 3 and 4 are fired from the stationary points and therefore the stationary points should open when No. 6 piston is coming up on its compression stroke and the line marked IGN 6 on the flywheel registers with the pointed screw at the timing peep hole. Adjustable points open when the line marked IGN 1, a quarter revolution from the IGN 6 mark, registers with the pointer.

Packard 120—Two breaker arms, a four lobe cam and one ignition coil are used. There is no manual spark control but an octane selector is fitted. Set the pointer of the octane selector at zero. The stationary breaker points should open when No. 1 piston is coming up on its compression stroke and the line 5 degrees before the mark #1 UP D.C. on the flywheel registers with the pointer at the timing peep hole. On either side of the #1 UP D.C. mark are five lines, each of which indicates two degrees of flywheel travel. Now crank the engine a quarter of a revolution until the line 5 degrees before the mark #6 UP D.C. registers with the pointer at the timing peep hole. At this point the adjustable points should just break.

Plymouth 6—Timing instructions are the same as described for Chrysler Airstream 6 except that the fourth line after the O mark on the scale should register with the pointer when the points open.

Pontiac 6—A single breaker distributor is used. There is no manual spark control but a vacuum control unit and a gaselector are fitted. The pointer of the gaselector should be set at O of the scale to which it is attached when timing the ignition. Breaker points should open when No. 1 piston is coming up on its compression stroke and the first, or lower, line marked IGN 1&6 registers with the pointer at the timing peep hole. The thumb screw at the gaselector can then be loosened and the arm moved to get maximum results from the grade of fuel being used. Particular attention should be paid to the position of the distributor before loosening the thumb screw as tension against the distributor from the vacuum suction tube may cause the selector arm to move when the thumb screw is loosened.

Pontiac 8—Timing instructions are the same as described for Pontiac 6 except that the lines on the flywheel are marked IGN 1&8.

Reo Flying Cloud 6—A single breaker distributor is used and there is no manual spark control. Breaker points should open when No. 1 piston is coming up on its compression stroke and the U.D.C. mark on the flywheel is 4 teeth from registering with the pointer at the timing peep hole.

Reo Royale 6—Timing instructions are the same as described for Reo Flying Cloud 6 except that the points break when the No. 1 piston is coming up on its compression stroke and the U.D.C. mark is 3 teeth from registering with the pointer at the timing peep hole.

Studebaker Dictator 6—A single breaker distributor fitted with a vacuum spark control unit is used. Breaker points should open when No. 1 piston is coming up on its compression stroke and the U.D.C. 1-6 mark on the flywheel registers with the pointer at the timing peep hole.

Studebaker Commander 8, President 8—Two breaker arms, a four lobe cam and one ignition coil are used. There is no manual spark control but a vacuum spark control unit is fitted. The stationary points should open when No. 1 piston is coming up on its compression stroke and the line marked U.D.C. 1-8 registers with the pointer at the timing peep hole. The adjustable points should be set to open exactly 90 degrees of engine travel after the stationary points.

Willys 77—A single breaker distributor is used. There is no manual spark control. Breaker points should open when No. 1 piston is coming up on its compression stroke and the line marked IGN on the flywheel registers with the pointer at the timing peep hole.

Tire Sizes . . . Change-Over Table

Old Size	New Size	Old Size	New Size	Old Size	New Size
25 x 3.75	3.75 x 18	31 x 5.25	5.25 x 21	29 x 6.50	6.50 x 17
28 x 4.40	4.75 x 20	28 x 5.50	5.50 x 18	30 x 6.50	6.50 x 18
29 x 4.40	4.40 x 21	29 x 5.50	5.50 x 19	31 x 6.50	6.50 x 19
29 x 4.50	4.50 x 20	30 x 5.50	5.50 x 20	32 x 6.50	6.50 x 20
30 x 4.50	4.50 x 21	30 x 5.77	6.00 x 20	33 x 6.50	6.50 x 21
28 x 4.75	4.75 x 19	32 x 5.77	6.00 x 22	30 x 6.75	7.00 x 18
29 x 4.75	4.75 x 20	33 x 5.77	6.00 x 23	31 x 6.75	7.00 x 19
30 x 4.75	4.75 x 21	29 x 6.00	6.00 x 17	32 x 6.75	7.00 x 20
29 x 4.95	5.00 x 20	30 x 6.00	6.00 x 18	33 x 6.75	7.00 x 21
30 x 4.95	5.00 x 21	31 x 6.00	6.00 x 19	31 x 7.00	7.00 x 17
31 x 4.95	5.00 x 22	32 x 6.00	6.00 x 20	32 x 7.00	7.00 x 18
29 x 5.00	5.00 x 19	33 x 6.00	6.00 x 21	33 x 7.00	7.00 x 19
30 x 5.00	5.00 x 20	34 x 6.00	6.00 x 22	34 x 7.00	7.00 x 20
31 x 5.00	5.00 x 21	35 x 6.00	6.00 x 23	35 x 7.00	7.00 x 21
32 x 5.00	5.00 x 22	30 x 6.20	6.50 x 18	31 x 7.50	7.50 x 17
28 x 5.25	5.25 x 18	31 x 6.20	6.50 x 19	32 x 7.50	7.50 x 18
29 x 5.25	5.25 x 19	32 x 6.20	6.50 x 20	33 x 7.50	7.50 x 19
30 x 5.25	5.25 x 20	33 x 6.20	6.50 x 21		

Valve Timing *on the* 1935 Cars

BY

EDWARD H. BARRY

Service Editor of MoToR

SPECIFICATIONS

Car Make And Model	Operating Tappet Clearance		Valve Timing, degrees		No of Teeth in Fly wheel
	Intake	Exhaust	Intake Opens	Exhaust Closes	
Auburn 653...	.006H	.006H	5B	10A	110
Auburn 851...	.006H	.006H	5B	10A	110
Buick 40	.008H	.008H	4½B	21A	146
Buick 50.....	.008H	.008H	4½B	30A	150
Buick 60..... ..	.008H	.008H	4½B	30A	156
Buick 90.....	.008H	.008H	4½B	30A	156
Cadillac V8..	.006C	.010C	6B	2A	113
Chevrolet Std. 6.	.006H	.013H	4B	4A	132
Chevrolet Mast. 6	.006H	.013H	4B	4A	132
Chrysler 6, AS.	.006H	.008H	DC	2A	146
Chrysler 8, AS.	.006H	.008H	2B	4A	146
Chrysler 8, AF	.006H	.008H	2B	4A	146
Chrysler Imp. 8, AF	.006H	.008H	2B	4A	146
Chrysler I.C.8-137..	.006H	.008H	2B	4A	146
Chrysler I.C.8-146..	.005H	007H	2B	4A	124
DeSoto 6, AS...	.006H	.008H	DC	2A	146
DeSoto 6, AF.	.006H	.008H	DC	2A	146
Dodge 6....	.006H	.008H	6A	8A	146
Ford V8....	.013C	.013C	9½B	6½A	112
Graham 6.....	.010H	.010H	2B	8B	130
Graham Special 6..	.010H	.010H	DC	10A	136
Graham 8.....	.010H	.010H	DC	10A	136
Graham Superchrgd 8	.010H	.010H	DC	10A	136
Hudson Big 6...	.006H	.008H	11B	19A	107
Hudson 8.... ...	.006H	.008H	11B	19A	134
Hupmobile 517...	.010H	.013H	2B	3A	112
Hupmobile 518, 521.	.010H	.013H	2B	3A	112
Hupmobile 527...	.018H	.018H	3A	5A	109
LaFayette 6.....	.008H	.008H			104
LaSalle 8.	.006H	.008H	6A	5A	145
Nash Adv. 6.	.015H	.015H			104
Nash Adv., Amb. 8	.015H	.015H			113
Oldsmobile 6...	.008H	.010H	5B	5A	145
Oldsmobile 8...	.008H	.010H	DC	10A	145
Packard 120.	.007H	.009H	5B	5A	140
Packard 8, Super 8..	.004H	.006H	30B	30A	118
Plymouth 6...	.006H	.008H	6A	8A	146
Pontiac 6...	.009H	.009H	5B	5A	139
Pontiac 8.....	.009H	.009H	5B	5A	139
Reo Flying Cloud 6 .	.007H	.008H	DC	2A	150
Reo Royale 6.... .	.007H	.008H	DC	2A	118
Studebaker Dict 6	.004H	.006H	15B	5A	102
Studebaker Comm 8.	.004H	.006H	15B	10A	105
Studebaker Pres 8	.004H	.006H	15B	10A	105
Terraplane 6 .	.006H	.008H	11B	19A	107
Willys 77	.004H	.006H	DC	5A	96

ON SOME CARS where the engine has been moved forward it is necessary to remove a wheel housing, as shown in the illustration, or a hood sill to permit easy access to the valves for checking clearances or when grinding is necessary. When this must be done the operation is described under the name of the car, together with the valve timing instructions.

Buick 50, 60 and 90; Chevrolet Standard 6 and Master De Luxe 6; Ford V8; Studebaker Dictator 6, Commander 8 and President 8 and Terraplane 6 cars are fitted with a fabric camshaft gear which meshes with the cranksaft gear. All other cars are fitted with a chain to drive the camshaft. On Graham 8 and Supercharged 8, Packard 8 and Super 8 cars the chain tension can be adjusted manually while on Cadillac V12, V16 and Lincoln V12 cars the tension is automatically adjusted. All other cars are fitted with a short chain which drives only the camshaft and no adjustment is possible.

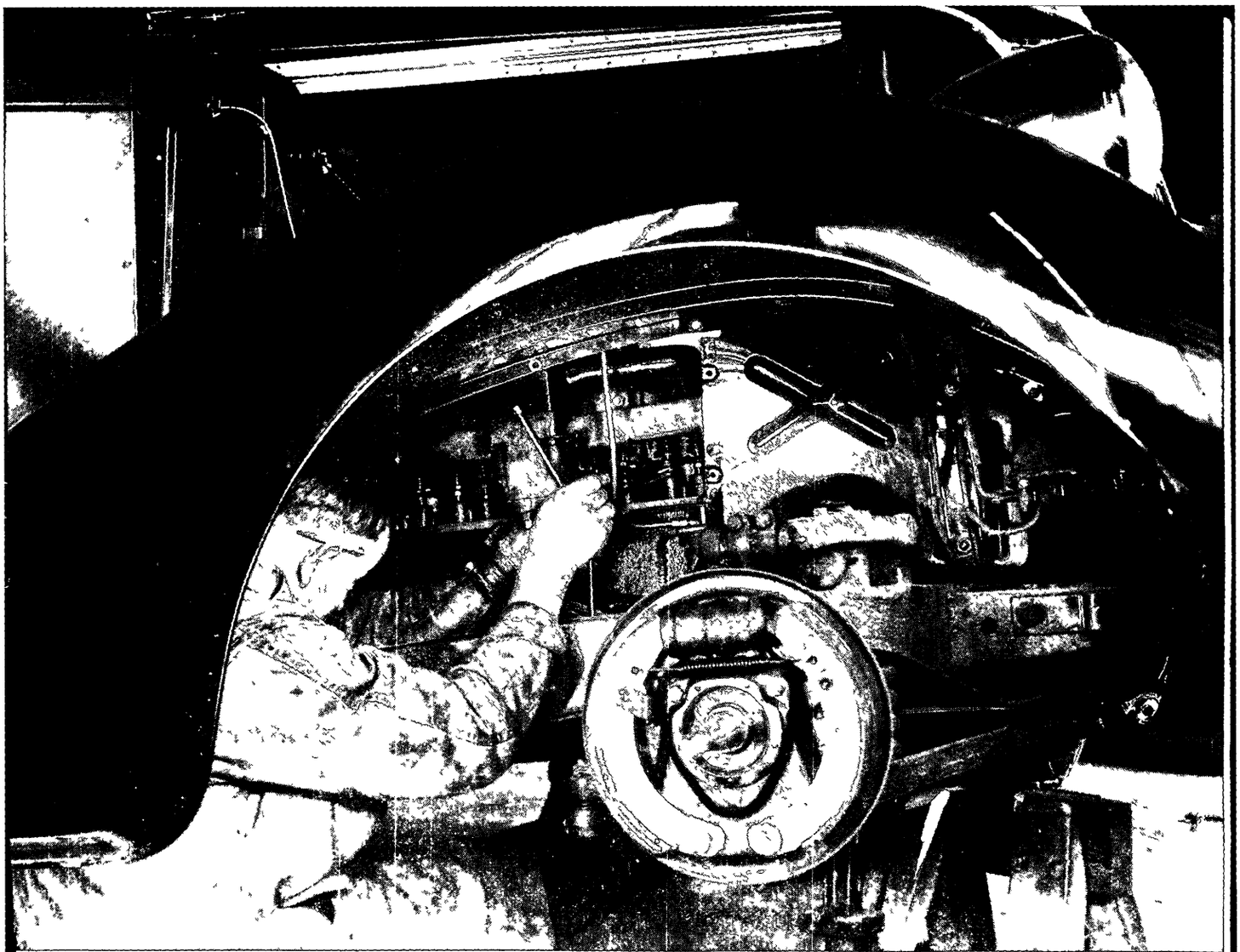
Auburn 653—There should be 12 links, on the lower side of the chain, between the punch marks on the camshaft and crankshaft sprockets. With the sprockets in this position, the top dead center mark for No. 1 and No. 6 cylinders will be in line with the pointer on the crankcase. Tappet clearance .012".

Auburn 851—Timing instructions are the same as described for Auburn 653 except that the flywheel is marked UDC 1 and 8.

Buick 40—There should be 10 links, on the upper side of the chain, between the punch marks on the camshaft and crankshaft sprockets. To measure the valve opening, place an indicator on the exhaust valve spring cap for either No. 2 or No. 7 cylinder. The clearance for the valve being set must be .008". Set the indicator so that it will register 0 with the valve closed. When the crankshaft has been turned in the direction of rotation so that the valve opens .163", the No. 1 and No. 8 top dead center mark on the flywheel should be visible in the timing peep hole.

Buick 50, 60, 90—The timing marks on the camshaft and crankshaft gears should mesh. Valve opening is measured as described for the Buick 40, except that the crankshaft should be turned until the valve opens .180".

Cadillac V8—The timing marks on the camshaft and crankshaft sprockets should register with a line through the centers of the shafts. With No. 1 exhaust valve in the right bank set at .010" clearance, crank the engine until No. 1 piston in the right bank is coming up on its exhaust stroke and the mark C/4 on the flywheel



registers with the pointer at the timing peep hole. Number 1 exhaust valve in the right bank should now be just about closed with the valve tappet still tight.

Chevrolet Standard and Master 6—The timing marks on the camshaft and crankshaft gears should mesh. With No. 1 intake valve set at .010″ clearance, crank the engine until No. 1 piston is coming up on its exhaust stroke and the steel ball in the flywheel is ⅓ tooth past the pointer at the timing peep hole. Number 1 intake valve tappet should now be tight with the valve about to open.

Chrysler Airstream 6, DeSoto 6—The timing marks on the camshaft and crankshaft sprockets should register with a line through the centers of the shafts. To check tappet clearance remove the right front wheel and slide the wheel housing cover up. To remove the cover it may be necessary to remove the air cleaner. The opening will then permit removal of the tappet covers and access to the tappets. With No. 6 intake valve tappet clearance set at .010″ cold, crank the engine until No. 6 piston reaches top dead center of its exhaust stroke. This can be measured by the DC marks on the impulse neutralizer or by using a timing indicator over No. 6 piston. In this position, No. 6 intake valve tappet should be tight with the valve about to open.

Chrysler Airstream 8—The timing marks on the camshaft and crankshaft sprockets should register with a line through the centers of the shafts. The wheel housing cover should be removed as described for Chrysler 6. With No. 8 intake valve tappet clearance set at .011″ cold, crank the engine until No. 8 piston is coming up on its exhaust stroke and stopped .002″ before top dead center. This position can be measured by the DC marks on the impulse neutralizer by using a timing indicator over No. 8 piston. In this position, No. 8 intake valve tappet should be tight with the valve about to open

Chrysler Airflow 8, Imperial 8, Imperial Custom 8—The timing marks on the camshaft and crankshaft sprockets should register with a line through the centers of the shafts. The wheel housing should be removed as described for Chrysler 6. With No. 8 intake valve tappet clearance set at .011″ cold, crank the engine until No. 8 piston is coming up on its exhaust stroke and stopped .002″ before top dead center. This position can be measured by using a timing light over No 8 piston or by using the degree marks on the crankshaft impulse neutralizer. Each line indicates one degree and when the pointer on the timing gear case cover registers with the second line ahead of the 0 mark the crankshaft is in its correct position. In this

position No. 8 intake valve tappet should be tight with the valve about to open.

Dodge 6, Plymouth 6—The timing marks on the camshaft and crankshaft sprockets should register with a line through centers of the shafts. The wheel housing cover should be removed as described for the Chrysler 6. With No. 6 intake valve tappet clearance set at .011″ cold, crank the engine until No. 6 piston reaches top dead center of its exhaust stroke and continue until it is .015″ past that point. This position can be measured by using a timing indicator over No. 6 piston or by using the degree marks on the impulse neutralizer. Each line indicates one degree and when the pointer on the timing gear case cover registers with the sixth line after the 0 mark the crankshaft is in its correct position. In this position, No. 6 intake valve tappet should be tight with the valve about to open.

Ford V8—The timing marks on the camshaft and crankshaft gears should mesh. There are no marks on the flywheel. When the timing gears are correct, the timing is correct provided the valve clearances are correct. If the clearance is too small the end of the valve stem must be ground. If the clearance is too great, the valve must be ground further into its seat.

Graham Special 6—There should be 10 links, on the lower side of the chain, between the timing marks on the camshaft and crankshaft sprockets. With No. 6 exhaust valve set at .012″ clearance cold, crank the engine until No. 1 piston comes up on its compression stroke and the EC1 mark on the flywheel is opposite the pointer at the timing peep hole. In this position, No. 6 exhaust valve should be just closed with the valve lifter loose.

Graham 6—Timing instructions are the same as described for the Graham Special 6 except that there should be 9 links, on the upper side of the chain, between the timing marks on the camshaft and crankshaft sprockets.

Graham 8, Supercharged 8—Timing instructions are the same as described for Graham Special 6 except that the checking is done at No. 8 exhaust valve.

Hudson Big 6, Terraplane 6—The timing marks on the camshaft and crankshaft gears should mesh. With No. 1 intake valve set at .010″ crank the engine until No. 6 piston is coming up on its compression stroke and the line marked I0 on the flywheel registers with the pointer at the timing peep hole. In this position, No. 1 intake valve tappet should be tight and the valve about to open.

Hudson 8—Timing instructions are the same as described for Hudson Big 6 except that the engine is cranked until No. 8 piston is coming up on its compression stroke.

Hupmobile 517, 518, 521—The timing marks on the camshaft and crankshaft sprockets should register with a line through the centers of the shafts. With No. 1 intake valve tappet clearance set at .014″ and No. 1 exhaust valve tappet clearance set at .021″, crank the engine until No. 6 piston is at top dead center of its compression stroke. In this position the line on the flywheel marked DC 1-6 will register with the finished bosses at the front face of the flywheel housing. Both valves for No. 1 cylinder should now be closed.

Hupmobile 527—There should be 15 links, on the upper side of the chain, between the timing marks on the camshaft and crankshaft sprockets. With No. 1 intake valve tappet clearance set at .020″ and No. 1 exhaust valve tappet clearance set at .026″, crank the engine until No. 8 piston is at top dead center of its compression stroke. In this position the line on the flywheel marked 1-8 DC will register with the center line of the timing peep hole. Both valves for No. 1 cylinder should now be closed.

LaFayette 6, Nash Adv. 6, Nash Adv. 8—The timing marks on the camshaft and crankshaft sprockets should register with a line through the centers of the shafts. When the shafts are in this position the valve timing is correct.

LaSalle 8—The timing marks on the camshaft and crankshaft sprockets should register with a line through the centers of the shafts. When the shafts are in this position, the valve timing is correct.

Oldsmobile 6—The timing marks on the camshaft and crankshaft sprockets should register with a line through the centers of the shafts. With No. 1 intake valve tappet set at .010″ clearance, crank the engine until No. 1 piston is coming up on its exhaust stroke and the TDC mark on the flywheel is just two teeth from being in line with the pointer at the timing peep hole. In this position, No. 1 intake valve tappet should be tight with the valve about to open.

Oldsmobile 8—The timing marks on the camshaft and crankshaft sprockets should register with a line through the centers of the shafts. With No. 1 intake valve tappet set at .010″ clearance, crank the engine until No. 1 piston is coming up on its exhaust stroke and the line marked TDC on the flywheel registers with the pointer at the timing peep hole.

Packard 120—The timing marks on the camshaft and crankshaft sprockets should register with a line through the centers of the shafts. With No. 1 intake valve tappet set at .007″, crank the engine until No. 1 piston is coming up on its exhaust stroke and within 2½ lines of registering with the pointer at the peep hole. A line on the flywheel is marked #1 UP DC and there are five shorter lines on either side of it. Each line indicates 2 degrees of flywheel travel.

Packard 8, Super 8—The timing marks on the camshaft and crankshaft sprockets should register with a line through the centers of the shafts. With No. 1 exhaust valve set at .005″ clearance, crank the engine until No. 1 piston comes up on its exhaust stroke and the EC 1-8 mark on the flywheel registers with the pointer at the peep hole. In this position, No. 1 exhaust valve should be just closed.

Pontiac 6, 8—The timing marks on the camshaft and crankshaft sprockets should register with a line through the centers of the shafts. To grind or lash the valves, the right hood sill must be removed. With No. 1 intake valve tappet set at .010″ clearance, crank the engine until No. 1 piston is coming up on its exhaust stroke and the first IGN line just passes the pointer at the timing peep hole. In this position No. 1 intake valve tappet should be tight with the valve about to open.

Reo Flying Cloud 6, Royale 6—The timing marks on the camshaft and crankshaft sprockets should register with a line through the centers of the shafts. With No. 1 intake valve tappet set at .012″ clearance, crank the engine until No. 1 piston is coming up on its exhaust stroke and the UDC mark on the flywheel registers with the pointer at the timing peep hole. In this position, No. 1 intake valve tappet should be tight with the valve about to open.

Studebaker Dictator 6, Commander 8, President 8—The timing marks on the camshaft and crankshaft gears should mesh. With No. 1 intake valve tappet set at .010″, crank the engine until No. 1 piston is coming up on its exhaust stroke and the UDC mark on the flywheel is within 4¼ teeth of the pointer at the timing peep hole. Number 1 intake valve tappet should now be tight with the valve about to open.

Willys 77—The timing marks on the camshaft and crankshaft sprockets should register with a line through the centers of the shafts. With No. 1 intake valve tappets set at .010″ clearance, crank the engine until No. 4 piston is coming up on its compression stroke and the 10 mark on the flywheel registers with the pointed end of the timing peep hole cover screw. The 10 mark is also the top dead center mark for No. 1 and No. 4 pistons. In this position, No. 1 intake valve tappet should be tight with the valve about to open.